Journal of the Fisheries Research Board of Canada

Journal de l'office des recherches sur les pêcheries du Canada

Volume 34, Index 1977

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Fisheries and Marine Service

Pêches et Environnement Canada
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Fisheries and Marine Service
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Service des pêches et de la mer
Direction de l'information et des publications scientifiques

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Journal of the Fisheries Research Board of Canada

Journal de l'office des recherches sur les pêcheries du Canada

Volume 34, Index 1977

INDEX TO PUBLICATIONS FOR 1977[1]

In 1968 the Fisheries Research Board of Canada published Bulletin 164, a subject-author index and list of publications to 1964. Miscellaneous Special Publication 18, covering the period 1965-72, was published in 1973.

Since 1973 an annual subject-author index has been published as an appendix to the December issues of the Journal. The index also contained a list of all articles, in all series, of publications, Studies, Interpretive Articles, and Miscellaneous Special Publications.

The 1977 index contains a subject index, author index, and list of publications, based on: a) the 12 issues of Volume 34 of the Journal; b) Bulletins 195, 196, 197, and 198; c) Circulars and Technical Reports issued by Service establishments during 1977 in time to be included; d) Miscellaneous Special Publications 30F, 31, 33, 34, and 35; e) Studies 2246-2385, reprints of articles published in other periodicals; f) general reference to the 1976 Annual Report; g) Interpretive Articles 342-351; h) Manuscript Reports issued by Service establishments during 1977 in time to be included; i) Data Reports 26-40.

All entries in the subject index are made up of an entry term plus a number of modifying terms (not exceeding three) plus a taxonomic name (omitted where the taxon is the entry term), or common name (omitted where the common name is the entry term), and a geographic entry (also omitted where the geographic area is the entry term). The entry term and modifying terms are selected from the controlled vocabulary wherever possible (*Thesaurus of Terms for Aquatic Sciences and Fisheries*, FAO Fish. Circ. 344), but in some cases it is necessary to use "free terms" (i.e. uncontrolled terms of not more than 50 characters) to adequately convey the subject concept. It is possible for these free terms to appear in any modifying position but never as entry terms.

[1]Prepared under contract by Huntsman Marine Laboratory.

Printed in Canada

INDEX DES PUBLICATIONS POUR 1977[1]

En 1968, l'Office des recherches sur les pêcheries du Canada publiait le Bulletin n° 164 qui constituait un index des matières et des auteurs, ainsi qu'une liste des publications antérieures à 1965. Le n° 18 des Publications diverses spéciales, visant la période de 1965 à 1972, a paru en 1973.

Depuis 1973, on publie annuellement un index des matières et des auteurs annexé aux numéros de décembre du Journal de l'Office des recherches sur les pêcheries. Cet index comprend aussi une énumération des articles ayant paru dans toutes les séries de publications, d'Études, d'Articles explicatifs, et de Publications diverses spéciales.

L'index pour 1977 comprend un repertoire des matières et des auteurs, et une liste des publications, fondés sur: a) les 12 numéros du volume 34 du Journal; b) les Bulletins numéros 195, 196, 197 et 198; c) les Circulaires et les Rapports techniques publiés par les établissements du Service, lorsqu'ils étaient prêts à temps pour y figurer, d) les Publications diverses spéciales n° 30F, 31, 33, 34 et 35; e) les Études n° 2246 à 2385, qui sont des réimpressions d'articles publiés dans d'autres périodiques; f) des références générales au Rapport annuel de 1976; g) les Articles explicatifs n° 342 à 351; h) les Rapports manuscrits publiés par les établissements du Service, lorsqu'ils étaient prêts à temps pour y figurer; i) les Rapports statistiques n° 26 à 40.

Toutes les notices de l'index des matières sont composées d'un terme d'entrée et d'au plus trois termes modificatifs, ainsi que d'une désignation taxonomique (sauf si celle-ci constitue le terme d'entrée), ou d'une appellation courante (sauf si celle-ci est le terme d'entrée), et d'une inscription géographique (omise si la région géographique est le terme d'entrée). Dans la mesure du possible, le terme d'entrée et les termes modificatifs sont choisis suivant le vocabulaire contrôlé (*Thesaurus of Terms for Aquatic Sciences and Fisheries*, FAO Fish. Circ. 344), mais dans certains cas il est nécessaire d'employer des "termes libres" (termes non contrôlés de 50 caractères ou moins) pour exprimer convenablement le sujet traité. Les termes libres peuvent servir de termes modificatifs mais jamais de termes d'entrée.

[1]Établi à forfait par le Laboratoire Huntsman des sciences marines.

Imprimé au Canada

ABBREVIATIONS USED IN INDEX

(The designation (F) in the index indicates the article referred to was published in French, and (R) indicates the article was reprinted in 1977.)

J - Journal of the Fisheries Research Board of Canada

B - Bulletin

AR - Annual Report of the Fisheries Research Board of Canada

MSP - Miscellaneous Special Publication

S - Studies

T - Technical Report

M - Manuscript Report

D - Data Report

A - Interpretive Article

CHN - Circular of Halifax Laboratory

CNG - Circular of Biological Station, Nanaimo, B.C. (general series)

The Provinces and Territories of Canada are abbreviated to:

Alta. (Alberta)
B.C. (British Columbia)
Man. (Manitoba)
N.B. (New Brunswick)
Nfld. (Newfoundland)
N.S. (Nova Scotia)
N.W.T. (Northwest Territories)
Ont. (Ontario)
P.E.I. (Prince Edward Island)
Que. (Quebec)
Sask. (Saskatchewan)
Y.T. (Yukon Territory)

Certain geographical areas (particularly oceans) have their major subdivisions designated by N(north), S(south), E(east), W(west), NW(northwest), etc., also Atl.(Atlantic), Pac.(Pacific).

Certain international commissions are commonly referred to as: ICNAF(International Commission for the Northwest Atlantic Fisheries): INPFC(International North Pacific Fisheries Commission).

Scientific names, common names, and their spellings, for the Canadian and American marine fishes taken within 200-m depth and for freshwater fishes are indexed according to the nomenclature recommended in *A List of Common and Scientific Names of Fishes from the United States and Canada* (Third Edition, 1970), Special Publication No. 6 of the American Fisheries Society. Where authors have used names or spellings not conforming to those recommended, index headings for such names are included, referring to the recommended ones under which the subject entries will be found.

ABRÉVIATIONS EN USAGE DANS L'INDEX

(La désignation (F) dans l'index signifie que l'article dont il est question a été publié en français et la désignation (R) signifie que l'article a été réimprimé en 1977.)

J - Journal de l'Office des recherches sur les pêcheries du Canada

B - Bulletin

AR - Rapport annuel de l'Office des recherches sur les pêcheries du Canada

MSP - Publications diverses spéciales

S - Études

T - Rapports techniques

M - Rapports manuscrits

D - Rapports statistiques

A - Articles explicatifs

CHN - Circulaire du laboratoire d'Halifax

CNG - Circulaire de la station de biologie à Nanaimo (C.-B.) (séries générales)

Les provinces et territoires du Canada sont abrégés comme il suit:

Alta. (Alberta)
B.C. (Colombie-Britannique)
Man. (Manitoba)
N.B. (Nouveau-Brunswick)
Nfld. (Terre-Neuve)
N.S. (Nouvelle-Écosse)
N.W.T. (Territories du Nord-Ouest)
Ont. (Ontario)
P.E.I. (Île-du-Prince-Édouard)
Que. (Québec)
Sask. (Saskatchewan)
Y.T. (Territoire du Yukon)

Certaines régions geographiques (surtout les océans) ont leur principales subdivisions indiquées de la façon suivante: N(nord), S(sud), E(est), W(ouest), NW(nord-ouest), ainsi que Atl.(Atlantique), P(Pacifique).

On désigne communément certaines commissions internationales de la façon suivante: ICNAF(Commission internationale des pêcheries de l'Atlantique nord-ouest), INPFC(Commission internationale des pêcheries du Pacifique nord).

Les désignations scientifiques, les noms communs, et l'orthographe des poissons marins canadiens et américains, pris endeçà de 200 m de profondeur, ainsi que les poissons d'eau douce sont indexés conformément aux recommandations de l'ouvrage *A List of Common and Scientific Names of Fishes from the United States and Canada* (troisième editions, 1970), Publication spéciale nº 6 de l'American Fisheries Society. Quand un auteur utilise des désignations différentes des formes recommandées, on inclut des rubriques renvoyant à ces derniéres, sous lesquelles on trouve les notices.

KEY TO ESTABLISHMENTS

The number in front of each address corresponds to the number shown at the end of titles in some of the listed series of publications to indicate from which establishment the publication or report originated, or may be obtained.

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Bear, polar (*Ursus maritimus*) (*Thalarctos maritimus*)
J 34(8) : 1126 (predation, seals, Canadian Arctic)
T 680 (migrations, census, Cape Hay, Bylot I., N.W.T.)
694 (catch statistics, N.W.T.)

Beaufort Sea
J 34(7) : 976 (distribution, abundance, interspecific relationships, seals)
S 2313 (standing stock, primary production)
A 346 (biological resources)

Bedford Basin, N.S.
S 2283 (respiration, excretion, zooplankton)
2284 (digestive enzymes, food, zooplankton)

Behavior
J 34(5) : 730 (temperature change, fishes)
(5) : 734 (orientation behavior, thermoregulation, fishes)
(9) : 1365 (avoidance, chlorine, spotted bass, rosyface shiner)
(10): 1467 (vision, walleye, sauger)
(10): 1475 (vision, perches, pikeperches)
(10): 1983 (models, Percidae)
T 666 (avoidance, pulpmill effluents, coho salmon, Stuart Channel, B.C.)

Beluga (*Delphinapterus leucas*)
T 667 (distribution, migrations, Central Arctic Region)
680 (migrations, census, Cape Hay, Bylot I., N.W.T.)
694 (catch statistics, N.W.T.)

Benthos
J 34(1) : 164 (metabolic measurements, copepods)
(11): 2001 (production, L. Memphremagog, Que.-Vt.)
(11): 2133 (production, salmon rearing channels)
S 2328 (river diversion, environmental effects, Squamish R. delta, B.C.)
2337 (community composition, seasonal variations, St. Margaret's Bay, N.S.)
T 711 (community composition, lakes, N.W.T.)
718 (pulpmill effluents, pollution effects, L'Etang Inlet, N.B.)

Benthos collecting devices
J 34(7): 1031 (sampler)

Bering Sea
J 34(5): 611 (*lymphocystis disease, yellowfin sole*)

Bibliographies
T 621 (Arctic char)
655 (spiny dogfish)
659 (selected bibliographies, rockfishes, NE Pac.)
672 (limnology, inland fisheries, Canada)
720 (ocean clam, NW Atl.)
M 1427 (Pacific herring)

Bicinctus-group (*see* Chironomidae)

Bioaccumulation
J 34(1): 9 (hexavalent chromium, rainbow trout)
(1): 89 (chlordane, lipids, northern redhorse sucker)
(8): 1143 (petroleum, hydrocarbons, ringed seal)
S 2322 (halogenated hydrocarbons, Atlantic salmon)
2324 (polybrominated biphenyls, Atlantic salmon)
2326 (polychlorinated biphenyls, Atlantic salmon)
T 660 (copper, controlled ecosystem experiment, chum salmon)

Bioassays
J 34(4): 477 (pulpmill effluents, toxicity, salmonids)
(6): 869 (pulpmill effluents, toxicity, rainbow trout)
(7): 918 (phosphorus, atmospheric precipitations, lakes)
(9): 1389 (sealed-jar bioassays, pulpmill effluents, toxicity)

Biodegradation
S 2300 (pulpmill effluents, estuaries)

Biogeography
J 34(3): 388 (fishes, Peel River basin, Y.T.)
(5): 617 (biochemical genetics, lake whitefish, western provinces, Canada)
(10): 1450 (Percidae)
(10): 1464 (environmental factors, Eurasian perch, Australia)
T 722 (whales, Scotian Shelf)

Biological oxygen demand (BOD)
J 34(6): 784 (pulpmill effluents, Nipigon Bay, Ont.)

Bivalvia (*see* Heterodonta; Leptonacea)

Blood
J 34(2): 215 (hemolytic anemia, coho salmon)
(11): 2104 (biochemistry, sea scallop)
(11): 2193 (trypanosomes, Atlantic cod)
(11): 2164 (stress, salmonids, analytical techniques)
S 2249 (steroids, grey seal)

Bluegill (*Lepomis macrochirus*)
J 34(2): 239 (temperature preference)
(3): 332 (*otoliths, daily rings, controlled conditions*)

Bluff Lake, N.S.
J 34(5): 703 (predation, nauplii, zooplankton)

Bocaccio (*Sebastes paucispinis*)
T 664 (marketing, frozen products)

Bones
J 34(1): 147 (cleithrum bones, mercury, zinc, Atlantic cod)
(11): 2176 (fish bones, colonization, degradation)

Bream (*Abramis brama*)
J 34(10): 1678 (exploitation, interspecific relationships, L. Balaton, Hungary)

Brevoortia tyrannus (*see* Menhaden, Atlantic)

British Columbia (Province), Canada (*see also* Babine L.; Burrard Inlet; Crofton; Howe Sound; Johnstone Strait; Skeena R.; Squamish R. delta; Strait of Georgia; Stuart Channel; Vancouver I.)
J 34(5): 604 (fishery resources, gametogenesis, hermaphroditism, red sea urchin)
(11): 2067 (feeding behavior, spiny dogfish)
S 2254 (sampling, aquatic invertebrates, Lymn Creek)
2348 (new records, identification keys, poachers)
T 690 (stock assessment, Pacific ocean perch)
695 (chemical elements, life history, *Macrocystis integrifolia*)
707 (annual report, diseases, fishes)
D 28 (biological oceanographic data, Rupert Inlet, Holberg Inlet, Quatsino Sound)
29 (limnological data, lakes)
31 (limnological data, Henderson L.)
CNG 103 (mapping, spawning grounds, Pacific cod, Ucluelet)
104 (resource management, watersheds, Carnation Creek)
105 (pollution monitoring, mercury, seawater, fresh water)
106 (pollution monitoring, data storage, data retrieval)
107 (exploratory fishing, Dover sole)

Bullhead, black (*Ictalurus melas*)
S 2350 (olfaction, phospholipids, histochemistry)

Bullhead, brown (*Ictalurus nebulosus*)
J 34(3): 396 (algae, food conversion)

Burrard Inlet, B.C.
J 34(8): 1207 (environmental effects, growth, reproduction, kelp)

C

Caballeronema (see Nematoda)

Cabezon (*Scorpaenichthys marmoratus*)
S 2367 (vector, *Caballeronema*, Pac. coast, Canada)

Cabot Strait, Northwest Atlantic
J 34(4): 516 (physical oceanography, circulation)

Cadmium
S 2270 (eggs, Pacific herring)

Calanoida
J 34(2): 177 (DDT, accumulation, mathematical models, *Calanus finmarchicus*)
(3): 410 (resting eggs, *Pontella meadi*)
(8): 1196 (population dynamics, *Calanus*, Strait of Georgia, B.C.)
(12): 2381 (grazing, competition, *Pseudocalanus minutus*)

Calanus (see Calanoida)

Calcium compounds
J 34(11): 2176 (fish bones, colonization, degradation)
(12): 2405 (freshwater environment, apatite, algae)

Canada
J 34(5): 617 (biochemical genetics, biogeography, lake whitefish, western provinces)
(5): 710 (fisheries, aquatic sciences, perspective)
T 672 (bibliographic information, limnology, inland fisheries)
704 (geographical distribution, population dynamics, grey seal)
A 345 (atmospheric precipitations, sulfur, lakes)

Canarygrass, reed (*Phalaris arundinacea*)
S 2368 (indole alkaloids, fluorometric determination)

Cancer irroratus (see Crab, rock)
magister (see Crab, Dungeness)

Capelin (*Mallotus villosus*)
J 34(2): 209 (freezing storage, storage effects)
(11): 2008 (aging methods, otoliths)
(11): 2015 (larvae, ecology, Gulf of St. Lawrence)
(11): 2030 (juveniles, adults, ecology, Gulf of St. Lawrence)

Carbon; Carbon compounds
J 34(8): 1240 (carbon budget, L. Ontario)
(9): 1410 (allocthonous particulate carbon, Findley L., Wash.)
S 2378 (organic suspended matter, variability, Halifax-Bermuda)
T 721 (suspended matter, sediments, St. Georges Bay, N.S.)

Carcinogens
S 2261 (dimethylnitrosamine, herring meals)

Carnation Creek, Vancouver Island, B.C.
CNG 104 (watersheds, resource management)

Carnivora (pinnipeds)
S 2375 (evolution, trophic levels)

Carotenoids
J 34(5): 659 (pigments, blue-green alga)
(12): 2417 (astaxanthin, diets, salmonids, crustaceans)

Carp (*Cyprinus carpio*)
J 34(4): 509 (growth hormones)

Catch/effort (see also Fish catch statistics)
J 34(5): 583 (mathematical models, stochastic processes)
S 2278 (groundfish, Scotian Shelf)

Catch statistics (see also Fish catch statistics)
S 2272 (ringed seal, James Bay, Hudson Bay)
T 694 (aquatic mammals, arctic fox, polar bear, N.W.T.)

Catostomidae (see Suckers)

Catostomus catostomus (see Sucker, longnose)
commersoni (see Sucker, white)
commersoni utawana (see Sucker, dwarf white)

Cell culture
J 34(1): 134 (cell line, lumpfish)

Cells
S 2292 (cell size, marine diatoms)
2298 (secretory cells, pars distalis, salinity effects, coho salmon)

Census
J 34(7): 976 (seals, Beaufort Sea)
T 680 (aquatic mammals, Cape Hay, Bylot I., N.W.T.)

Centrarchidae (see Sunfishes)

Ceratomyxa (see Myxosporidia)

Cestoda
J 34(5): 706 (*Eubothrium salvelini*, parasitism, sockeye salmon)

Cetacea
S 2375 (evolution, trophic levels)

Chalk River, Ont.
S 2273 (methoxychlor, Simuliidae)

Chama (see Chamidae)

Chamidae
S 2345 (taxonomy, distribution, new species, *Chama*, E Pac.)

Chaoborus (Culicidae)
J 34(1): 113 (life cycle, competition, *Chaoborus punctipennis, C. trivittatus, C. americanus, C. flavicans*, Matamek R. system, Que.)

Char, Arctic (*Salvelinus alpinus*)
T 621 (bibliography)

Check lists
S 2313 (phytoplankton, S Beaufort Sea)
T 661 (zoobenthos, James Bay)
663 (invertebrates, Howe Sound, B.C.)

Chemical oceanography
T 685 (data, Eskimo Lakes, N.W.T.)
686 (Saint John R. Estuary, N.B.)

Chemical pollutants (*see also* Pollutants; Pollution; Pollution effects)
S 2321 (insecticides, toxicity, crayfish)
2322 (halogenated hydrocarbons, fishes)
2323 (alkyldinitrophenols, aquatic organisms)
2324 (polybrominated biphenyls, fishes)
2326 (polychlorinated biphenyls, fishes)
2371 (organochlorine compounds, aquatic organisms)
2376 (pesticides, metabolism, aquatic animals)

Chironomidae (midges)
J 34(1): 98 (new species, taxonomy, *Cricotopus, bicinctus*-group, Fort Simpson area, N.W.T.)
(2): 247 (life history, *Cricotopus*, Fort Simpson area, N.W.T.)
(2): 254 (oil contamination, *Cricotopus*, Fort Simpson area, N.W.T.)
(9): 1321 (new genus, new species, identification keys, *Paracladopelma, Saetheria*)
(12): 2354 (taxonomy, morphology, *Habrobaenus, Baeoctenus*)
B 195 (new species, new genera, identification keys, *Hydrobaenus, Trissocladius, Zalutschia, Paratrissocladius*, related genera) (corrections on J 34(8): 1256)
196 (new species, new genera, identification keys, *Nanocladius, Pseudochironomus, Harnischia* complex)
197 (female genitalia, morphology, phylogeny, identification keys)
S 2246 (surface sterilization, eggs)
2366 (larval cocoons, *Eukiefferiella claripennis*, Harris R., N.W.T.)

Chlorine; Chlorine compounds
J 34(2): 215 (wastewater, pollution effects, coho salmon)
(4): 486 (nitrite toxicity, coho salmon)
(7): 937 (organochlorine, grey seals, Sable I., N.S.)
(7): 1034 (hemolysis, rainbow trout)
(9): 1365 (hypochlorous acid, avoidance, spotted bass, rosyface shiner)
S 2371 (organochlorine compounds, aquatic organisms)

Chlorophylls
J 34(12): 2280 (distribution, L. Michigan)
S 2316 (distribution, seasonal variations, Experimental Lakes Area lakes, NW Ont.)
2354 (measuring devices, underwater vehicle)
T 706 (remote sensing, Yarmouth, N.S.)
721 (suspended matter, sediments, St. Georges Bay, N.S.)

Chromatographic techniques
J 34(3): 347 (oil detection, NW Atl.)
S 2261 (dimethylnitrosamine, herring meals)
2282 (ecdysteroids, separation)
2287 (laboratory equipment, tubing)
2288 (recording equipment, charts)
2329 (ozonolysis, fatty acids)
2330 (esters, fatty acids)
2361 (esters, separation)
2363 (microanalysis, methoxychlor, water, tissues)
2368 (fluorometric determination, indole alkaloids, reed canarygrass)
2369 (pollutant identification, carbofuran)

Chromium
J 34(1): 9 (hexavalent chromium, toxicity, rainbow trout)
S 2291 (sediments, Saguenay fjord, Que.)

Chromosomes
J 34(1): 134 (cell line, lumpfish)
(2): 266 (methodology, fish tissues)

Chrysosplenium tetrandrum (Saxifragaceae)
S 2377 (flavonoids)

Chub, lake (*Couesius plumbeus*)
J 34(3): 394 (biogeography, Peel River basin, Y.T.)
T 683 (age composition, growth, sexual maturity, Mile 66 Brook, Ten Mile L., W Labrador)

Chydoridae (*see* Cladocera)

Cichlidae
J 34(2): 232 (bottom trawling, commercial fishing, L. Malaŵi, Africa)

Circadian rhythms
J 34(9): 1426 (recording equipment, marine organisms)

Cladocera (Chydoridae; Daphnidae)
J 34(4): 463 (taxonomy, morphology, geographical distribution, *Pleuroxus denticulatus*)
(6): 863 (pollution effects, filtering rate, *Daphnia retrocurva*)

S 2347 (electron transport system, *Daphnia*)
T 698 (population ecology, *Evadne*, *Podon*, St. Margaret's Bay, N.S.)

Clam, ocean (*Arctica islandica*)
T 673 (processing fishery products, canned products)
720 (literature reviews, fishery resources, biological data, NW Atl.)

Clinocardium nuttallii (*see* Cockle, heart)

Clupea harengus harengus (*see* Herring, Atlantic)
harengus pallasi (*see* Herring, Pacific)

Cobalt
S 2291 (sediments, Saguenay fjord, Que.)

Cockle, heart (*Clinocardium nuttallii*)
T 662 (ocean dumping, pollution effects, controlled conditions)

Cod, Atlantic (*Gadus morhua*)
J 34(1): 147 (fish lengths, cleithrum bones, mercury, zinc)
(8): 1188 (virus, PEN)
(11): 2193 (parasitic diseases, trypanosomes, blood)
(12): 2411 (digestion rate, swimming speed)
S 2286 (stock assessment, potential yield, eastern Scotian Shelf)
2335 (trawl noise, Passamaquoddy Bay, N.B.)
2360 (aging methods, otoliths)

Cod, Pacific (*Gadus macrocephalus*)
T 657 (catch statistics, Pac. coast)
D 40 (fishery surveys, spawning grounds, SW Vancouver I.)
CNG 103 (mapping, spawning grounds, Ucluelet, B.C.)

Codworm (*Phocanema decipiens*) (*see* Nematoda)

Coelenterata
S 2299 (petroleum, pollution effects, locomotion, *Halitholus cirrattus*)

Colorimetric techniques
J 34(4): 559 (saxitoxin, detection, measurement)

Community composition
J 34(1): 167 (species diversity, fishes, L. Memphremagog, Que.-Vt.)
(8): 1105 (fishes, L. Memphremagog, Que.-Vt.)
(10): 1576 (multispecies fisheries, pike-perch lakes, Poland)
(10): 1613 (Percidae, lakes, N Ont.)
(10): 1734 (Eurasian perch, pikeperch, northern pike, Kličava Reservoir, Czechoslovakia)
(10): 1849 (long-term changes, fishes, Bay of Quinte, L. Ontario)
(10): 1989 (production, Percidae)
S 2337 (benthos, seasonal variations, St. Margaret's Bay, N.S.
T 691 (fishes, Red Indian L., Nfld.)
711 (benthos, lakes, N.W.T.)

Competition
J 34(1): 113 (*Chaoborus* spp., Matamek R. system, Que.)
(10): 1812 (walleye, Oneida L., N.Y.)

Computer programs
CNG 106 (pollution monitoring, data storage, data retrieval, B.C.)

Connecticut State, USA
J 34(5): 692 (fallout, phosphorus, Columbia L.)

Continental Shelf (off Nova Scotia)
T 708 (primary production, nutrients)

Copepoda
J 34(1): 164 (metabolic measurements, *Hastigerella leptoderma*, *Nannopus palustris*)
(7): 1028 (harpacticoids, feeding behavior, food)

Copper
T 660 (bioaccumulation, chum salmon, controlled ecosystem experiment)
669 (analysis, spectroscopic techniques, seawater)

Coregonus clupeaformis (*see* Whitefish, lake)

Cormorant, double-crested (*Phalacrocorax auritus*)
S 2266 (eggs, chlorinated hydrocarbons, Bay of Fundy)

Corrections (***Note:*** Of these references, only those referring to J 34 (but *not* the actual corrections) are shown after the affected entries under the subject heading in this index)
J 34(7): 1077 (to B 191)
(8): 1256 (to J 30(9):1347; J 32(12):2297; J 33(6):1288; 33(7):1557, 1630; 33(9): 2008; 33(11): 2470; 34(5):691; 34(7): 991, 993, 994, 995; B 193: 7, 10, 30, 32, 37, 38, 40, 41, 46; B 195: 41, 48, 192, 250, 253)

Cottus cognatus (*see* Sculpin, slimy)

Couesius plumbeus (*see* Chub, lake)

Crab, Alaska king (*Paralithodes camtschatica*)
J 34(7): 989 (growth, stochastic processes) (corrections on J 34(8): 1256)

Crab, Dungeness (*Cancer magister*)
J 34(3): 432 (larvae, epibiotic fouling, therapeutic treatment)
T 662 (ocean dumping, pollution effects, controlled conditions)

Crab, rock (*Cancer irroratus*)
J 34(9): 1426 (activity patterns, controlled conditions)

Crabs
S 2263 (fishery regulations, fishery management, North America)

Crassostrea gigas (*see* Oyster, Pacific)
virginica (*see* Oyster, Atlantic)

Crayfish
J 34(1): 155 (growth, environmental factors, *Pacifastacus leniusculus*, L. Tahoe, Calif.-Nev.)
(8): 1212 (exploitation, life tables, *Orconectes virilis*)
(11): 2041 (population dynamics, production, *O. virilis*, Michigan lakes)
(11): 2056 (experimental fishing, *O. virilis*, Michigan lakes)
S 2252 (production, *P. leniusculus trowbridgii*, river fisheries, W Ore.)
2321 (toxicity, organophosphate insecticides, *O. limosus*)
2323 (toxicity, alkyldinitrophenols, *O. limosus*)
2347 (electron transport system, *O. propinquus*)

Cricotopus (*see* Chironomidae)

Crofton, B.C.
T 652 (pulpmill effluents, pollution effects, salmonids)

Crotalus adamanteus
S 2260 (proteins, venom)

Crustacea
J 34(12): 2417 (red yeast, diets, pigments)
S 2334 (behavior, pollution effects, petroleum)

Crystophora cristata (*see* Seal, hooded)

Cucumaria frondosa (*see* Sea cucumber)

Culaea inconstans (*see* Stickleback, brook)

Cyanides
J 34(12): 2323 (toxicity, fathead minnow)

Cyclopterus lumpus (*see* Lumpfish)

Cyprinidae
J 34(2): 239 (temperature preference)
(9): 1397 (identification, larvae)

Cyprinus carpio (*see* Carp)

Cytology
J 34(8): 1188 (PEN, fishes, Atl. coast)

Czechoslovakia
J 34(10): 1571 (dominant species, ecological associations, Eurasian perch, roach, Kličava Reservoir)
(10): 1734 (community composition, ecological associations, Percidae, Kličava Reservoir)

D

Daphnia (*see* Cladocera)

Darter, johnny (*Etheostoma nigrum*)
J 34(8): 1105 (distribution, food availability, L. Memphremagog, Que.-Vt.)

DDT
J 34(1): 119 (dehydrochlorination, rainbow trout)
(2): 177 (accumulation, mathematical models, *Calanus finmarchicus*)
(11): 2089 (toxicity, fathead minnow)
S 2370 (metabolism, brook trout)

Delphinapterus leucas (*see* Beluga)

Departure Bay, Vancouver Island, B.C.
T 653 (environmental effects, hatching, eggs, Pacific herring)

Detritus
J 34(4): 563 (degration, meiofaunal effect, *Zostera marina*)
S 2336 (food webs, chum salmon)

Diatoms (*see also* Phytoplankton)
S 2292 (cell size, photosynthesis)

Diets (*see also* Food; Feeding)
J 34(5): 677 (thyroxine, rainbow trout)
(5): 683 (ascorbic acid, trout diets)
(11): 2207 (ascorbic acid, nutritional requirements, rainbow trout)
(12): 2417 (red yeast, salmonids, crustaceans)
S 2262 (nutrition studies, eyestalk ablation, American lobster)
2294 (fats, monkeys)
2343 (fats, fatty acids, monkeys)
2362 (docosenoic acids, seals)
T 719 (fats, monkeys)
724 (docosenoic acids, seals)

Digestion
J 34(12): 2411 (swimming speed, Atlantic cod)
S 2284 (enzymes, zooplankton, Bedford Basin, N.S.)

Diptera (*see* Chironomidae)

Directories
MSP 33 (scientific personnel, marine sciences, Canada)

Diseases; Disease control
J 34(1): 1 (bacterial kidney disease, hematology, coho salmon)
(2): 203 (vibriosis, furunculosus, immunization, coho salmon, chinook salmon)
(3): 402 (pathogen, *Eubacterium tarantellus*)
(3): 429 (ERM bacterium, *Aeromonas salmonicida*, disease control, water treatment)
(3): 432 (therapeutic treatment, epibio-

tic fouling, larvae, Dungeness crab)
(5): 611 (lymphocystis disease, yellowfin sole, Bering Sea)
(7): 1026 (vibriosis, immunization, coho salmon)
(8): 1244 (water treatment, ultraviolet irradiation)
(11): 2193 (parasitic diseases, trypanosomes, blood, Atlantic cod)
MSP 31 (manuals, Fish Health Protection Regulations, Canada)
S 2267 (furunculosis, liver, lipids, brook trout)
T 707 (annual report, fish diseases, B.C.)
A 348 (bacterial diseases, "seal finger")

Dispersion
J 34(6): 805 (pulpmill effluents, statistical model)
(9): 1379 (simulation, fry, sockeye salmon, Babine L., B.C.)

Distribution
J 34(1): 98 (*Cricotopus, bicinctus*-group, chironomids, Fort Simpson area, N.W.T.)
(3): 388 (fishes, Peel River basin, Y.T.)
(4): 463 (geographical, *Pleuroxus denticulatus*)
(7): 907 (geographical, phytoplankton, Howe Sound, B.C.)
(7): 1039 (range, white perch, L. Erie)
(8): 1105 (littoral zone, fishes, L. Memphremagog, Que.-Vt.)
(8): 1188 (geographical, virus, PEN, fishes, Atl. coast)
(9): 1436 (geographical, minke whale, finback whale, humpback whale, Nfld.-Labrador)
(12): 2280 (vertical, seasonal, chlorophyll *a*, L. Michigan)
(12): 2362 (vertical, blue hake, western N Atl.)
S 2259 (threespine stickleback, Great Central L., Vancouver I., B.C.)
2295 (limiting factors, *Littorina sitkana, L. planaxis*)
2316 (chlorophylls, Experimental Lakes Area lakes, NW Ont.)
2344 (coho salmon, N Pac.)
2345 (geographical, Chamidae, E Pac.)
2348 (geographical, poachers, B.C.)
2371 (organochlorine compounds, aquatic organisms)
T 667 (geographical, aquatic mammals, Central Arctic Region)
681 (geographical, fishery resources, Canada-US boundary areas, Atl. coast)
704 (geographical, grey seal, eastern Canada)
722 (geographical, whales, Scotian Shelf)

Dogfish, spiny (*Squalus acanthias*)
J 34(1): 44 (aging methods, X-ray spectrometry, Strait of Georgia, B.C.)
(9): 1286 (embryonic development, sexual reproduction, Strait of Georgia, B.C.)
(11): 2067 (feeding behavior, food, B.C.)
T 655 (bibliography)
699 (aging methods, X-ray spectrometry, growth, Strait of Georgia, B.C.)

Dominant species
J 34(10): 1571 (Eurasian perch, roach, Kličava Reservoir, Czechoslovakia)

Dorosoma cepedianum (*see* Shad, gizzard)

E

Echinorhynchus (*see* Acanthocephala)

Echo surveys
J 34(12): 2288 (digital integrators, stock assessment, Pacific herring, Alaska)

Ecology
J 34(10): 1504 (Eurasian perch, yellow perch)
(11): 2015 (larvae, capelin, Gulf of St. Lawrence)
(11): 2030 (juveniles, adults, capelin, Gulf of St. Lawrence)
T 698 (population ecology, Cladocera, St. Margaret's Bay, N.S.)

Ecosystems
J 34(1): 73 (mathematical models, predation, zooplankton)
(3): 436 (pollution effects, trace contaminants)
(10): 1959 (unperturbed ecosystems, population characteristics, Percidae)
S 2373 (pelagic marine ecosystems, biological prediction, mathematical models)
A 350 (water circulation, marine productivity, inlets, St. Margaret's Bay, N.S.)

Eel, American (*Anguilla rostrata*)
J 34(2): 294 (sex ratio, sex determination, Matamek R. system, Que.)

Eelgrass
J 34(4): 563 (degradation, meiofaunal effects, detritus, *Zostera marina*)

Eggs (*see also* Fish eggs)
J 34(3): 410 (incubation, *Pontella meadi*)
S 2246 (surface sterilization, chironomids)

Egypt
S 2374 (water circulation, salinity distribution, Suez Canal)

Eimeria gadi (Coccidia)
S 2297 (parasites, haddock, Nova Scotia banks)

ELA (*see* Experimental Lakes Area, Northwestern Ontario)

Electrophoresis
J 34(5): 617 (biogeography, lake whitefish)

(8): 1236 (hybrids, rainbow trout, cutthroat trout)
S 2276 (myoglobins, Salmonidae)

Embryonic development
J 34(7): 1019 (temperature effects, white sucker)
(9): 1286 (spiny dogfish, Strait of Georgia, B.C.)

Embryos
J 34(8): 1148 (fishes, toxicity tests)

Enclosures
J 34(8): 1095 (marine enclosures, water mixing, heat transfer)

Endocrine glands
J 34(5): 677 (thyroid, diet, temperature effects, rainbow trout)

Endocrinology
S 2249 (steroids, blood, grey seal)
2312 (gonadotropins, fishes, mammals)

Energy budget
J 34(8): 1240 (carbon budget, L. Ontario)
(10): 1922 (mathematical models, walleye, yellow perch)
S 2338 (barnacle, *Balanus glandula*)

Energy flow
S 2285 (mathematical models, plankton)

England
J 34(10): 1764 (exploitation, predation, Eurasian perch, L. Windermere)

Enhydra lutris (*see* Otter, sea)

Enteric redmouth disease (ERM) (*see* Diseases)

Environmental conditions
J 34(10): 1586 (percid habitat, lakes, central Europe)
(11): 2079 (acidification, La Cloche Mountain lakes, Ont.)
A 345 (acidification, lakes, Canada)

Environmental effects
J 34(8): 1207 (growth, reproduction, kelp, Burrard Inlet, B.C.)
(11): 2156 (hydrocarbons, fatty acids, Jeddore Harbour, N.S.)
S 2328 (river diversion, Squamish R. delta, B.C.)
T 653 (hatching, eggs, Pacific herring, Departure Bay, Vancouver I., B.C.)

Environmental factors
J 34(1): 19 (correlation analysis, fish catch, Gulf of Maine)
(12): 2316 (swimming speed, juveniles, striped mullet, spot, pinfish)
T 654 (mathematical models, primary production, Howe Sound, B.C.)

Environmental surveys
J 34(6): 771 (pulpmill effluents, pollution effects, Nipigon Bay, Ont.)
T 652 (pulpmill effluents, pollution effects, Crofton, B.C.)
691 (lake fisheries, limnology, Red Indian L., Nfld.)
697 (environmental data, North Harbour R., Nfld.)
A 342 (impact statements)

Enzymes
J 34(4): 501 (ALA-D, enzyme indicator, lead toxicity, fishes)
S 2260 (nucleolytic enzymes, venom, *Crotalus adamanteus*)
2284 (digestive enzymes, food, zooplankton, Bedford Basin, N.S.)
2353 (mixed function oxidases, marine organisms)
2385 (brain, rainbow trout)

Ephemeroptera
J 34(4): 529 (temperature shocks, thermal plumes, simulation)
S 2317 (parthenogenesis, *Hexagenia rigida*)

Equipment
J 34(2): 300 (Ichthyotron, orientation behavior, fishes)
(4): 571 (samplers, fish larvae)
(7): 1031 (benthos collecting devices)
(8): 1230 (samplers, zooplankton)
(9): 1426 (recording equipment, activity patterns, marine organisms)
(12): 2288 (digital integrators, echo integrators)
(12): 2409 (retrieval, underwater instruments, traps, Arctic)
S 2246 (surface sterilization, eggs, chironomids)
2254 (samplers, aquatic invertebrates)
2287 (tubing, chromatography)
2288 (recording equipment, charts, chromatography)
2354 (measuring devices, underwater vehicle, chlorophyll)
T 670 (processing fishery products, Pacific herring roe)
676 (refrigeration, standardization)
A 351 (cone removal tool, graphite furnace)

Erie, Lake, Ameria
J 34(7): 1039 (range, white perch)
(10): 1861 (interspecific relationships, population dynamics, Percidae)
(10): 1972 (mathematical models, population dynamics, walleye)

Erignathus barbatus (*see* Seal, bearded)

ERM (enteric redmouth bacterium) (*see* Diseases)

Escapement
D 39 (1965-1975 data, Pacific salmons)

Esocidae (*see* Pikes)

Esox americanus americanus (*see* Pickerel, redfin)
americanus vermiculatus (*see* Pickerel, grass)
lucius (*see* Pike, northern)
masquinongy (*see* Muskellunge)
niger (*see* Pickerel, chain)
reicherti (*see* Pike, Amur)

Estuaries
J 34(5): 697 (water circulation, Johnstone Strait, B.C.)
(11): 2117 (nutrients, distribution, St. Lawrence R. Estuary)
S 2300 (pollution monitoring, pulpmill effluents)
T 686 (hydrography, chemical properties, Saint John R. Estuary, N.B.)

Etheostoma nigrum (*see* Darter, johnny)

Eubacterium (*see* Bacteria)

Eubalaena glacialis (*see* Whale, right)

Eubothrium (*see* Cestoda)

Eukiefferiella (*see* Chironomidae)

Euphausiacea
J 34(2): 225 (*Thysanöessa raschii*, surface area, measurement)
(3): 443 (*T. raschii*, production, Gulf of St. Lawrence)

Europe, central
J 34(10): 1586 (percid habitat, lakes, environmental conditions)

Eutrophication
J 34(2): 286 (mathematical models, L. Ontario)
(10): 1670 (limnology, L. Constance, Germany)
(10): 1678 (limnology, L. Balaton, Hungary)
(10): 1720 (L. Mälaren, L. Hjälmaren, Sweden)
(10): 1849 (Bay of Quinte, L. Ontario)
(10): 1964 (habitat, Percidae)
S 2365 (nitrogen cycle, lakes, SW Man.)

Evadne (*see* Cladocera)

Evolution
J 34(10): 1450 (Percidae)
(10): 1890 (Percidae)
(12): 2338 (*Esox* spp.)
S 2375 (pelagic marine mammals, trophic levels)

Excretory products
S 2293 (degradation, invertebrates)

Exoskeleton
J 34(2): 225 (*Thysanöessa raschii*, surface area)

Experimental fishing
J 34(11): 2056 (crayfish, Michigan lakes)
T 701 (midwater trawls, northern pink shrimp, Gulf of St. Lawrence)

Experimental Lakes Area (ELA), Northwestern Ontario
J 34(7): 962 (zooplankton, indicator species)
S 2247 (methane oxidation)
2277 (nutrients, interrelationships)
2316 (chlorophylls, distribution, seasonal variations)
2383 (nutrients, sediments, eutrophic lakes)
D 32 (primary production, related parameters)
33 (light penetration)

Exploitation
J 34(7): 954 (artificial selection, gillnets, lake whitefish, Lesser Slave L., Alta.)
(8): 1130 (stability regions, Salmonidae)
(8): 1212 (life tables, crayfish)
(10): 1576 (multispecies fisheries, pike-perch lakes, Poland)
(10): 1678 (Eurasian perch, pikeperch, ruffe, bream, L. Balaton, Hungary)
(10): 1696 (walleye, Rainy L., Ont.-Minn.)
(10): 1764 (Eurasian perch, Windermere, England)
(10): 1769 (commercial fishing, sport fishing, walleye, Lac Des Mille Lacs, Ont.)
(10): 1830 (yellow perch, Saginaw Bay, Mich.)
(10): 1869 (walleye, yellow perch, L. St. Clair)
(10): 1983 (models, behavior, Percidae)
S 2352 (northern bottlenose whale)
A 347 (harp seal, N Atl.)

Exploratory fishing
MSP 35 (potential resources, groundfish, Labrador Sea)
CNG 107 (Dover sole, NW B.C.)

Eyes (*see* Vision)

Eyestalks
S 2262 (ablation, nutrition studies, American lobster)
2280 (growth, reproduction, American lobster)

F

Fallout
J 34(5): 649 (sulfur compounds, heavy metals, Lumsden L., Ont.)
(5): 692 (phosphorus, Columbia L., Conn.)
(7): 899 (heavy metals, lakes, Flin Flon, Man.)
S 2315 (acid precipitations, pollution effects, lakes, fishes, Canada)
A 345 (sulfur compounds, lakes, Canada)

Fatigue(biological)
J 34(11): 2164 (analytical techniques, stress, salmonids)

Fats
J 34(1): 89 (chlordane bioaccumulation, nor-

thern redhorse sucker)
S 2294 (diets, monkeys)
2296 (oxidation, Atlantic mackerel)
2303 (storage effects, oysters)
2307 (fatty acids, Atlantic menhaden)
2343 (diets, fatty acids, monkeys)
2346 (oxidation, Atlantic mackerel)
2350 (phospholipids, histochemistry, olfaction, fishes)
T 719 (diets, monkeys)
723 (fat content, Atlantic herring)

Fatty acids
J 34(11): 2156 (composition, environmental effects, Jeddore Harbour, N.S.)
S 2281 (wax esters, lubricating oil, analysis)
2303 (storage effects, oysters)
2304 (odd chain-length fatty acids, *Pontoporeia femorata*)
2305 (odd chain-length fatty acids, seasonal propagation, *P. femorata*)
2306 (octadecapentaenoic acid, plankton)
2307 (lipids, Atlantic menhaden)
2314 (marine food chains, invertebrates)
2329 (ozonolysis, chromatographic techniques)
2330 (esters, chromatography)
2343 (diets, monkeys)
2362 (docosenoic acids, heart, seals)
T 719 (diets, monkeys)
724 (docosenoic acids, heart, seals)
CHN 61 (analysis, methodology)

Feed
S 2261 (dimethylnitrosamine, herring meals)

Feeding
J 34(5): 633 (liver-somatic index, largemouth bass)
(12): 2411 (digestion rate, swimming speed, Atlantic cod)
S 2302 (supplemental feeding, coho salmon, Sandy Creek, Vancouver I., B.C.)
T 675 (feeding rate, metabolism, sockeye salmon)

Feeding behavior
J 34(2): 269 (gizzard shad, Acton L., Ohio)
(2): 290 (differential equation model, stomach content, fishes)
(7): 1028 (harpacticoid copepods)
(10): 1481 (light effects, walleye)
(10): 1492 (Eurasian perch, ruffe)
(10): 1559 (Eurasian perch, pikeperch, USSR)
(10): 1890 (Percidae)
(11): 2067 (spiny dogfish, B.C.)
(11): 2203 (American lobster, controlled conditions)
S 2251 (tentacles, sea cucumber)
2259 (threespine stickleback, sockeye salmon, Great Central L., Vancouver I., B.C.)
T 668 (Atlantic salmon, Soldiers Pond, Nfld.)
704 (grey seal, eastern Canada)

Finland
J 34(10): 1684 (catch statistics, population dynamics, pollution effects, Percidae)

Fish catch statistics; Landing statistics
J 34(10): 1684 (pikeperch, Eurasian perch, Finland)
S 2278 (catch/effort, potential yield, groundfish, Scotian Shelf)
2341 (silver hake, Scotian Shelf)
2344 (coho salmon, N Pac.)
T 657 (catch/effort, groundfish, Pac. coast)
681 (atlas, Canada-US boundary areas)
684 (commercial fishing, Atlantic salmon, Nfld.-Labrador)
D 36 (trawling, N Wash., S. Vancouver I., PMFC Areas 3B, 3C, sub-areas)
39 (1965-1975, Pacific salmons, B.C.)

Fish culture (*see also* Aquaculture; Genetics)
J 34(1): 31 (temperature effects, eggs, alevins, Atlantic salmon)
(3): 429 (disease control, *Aeromonas salmonicida*)
(4): 486 (nitrite toxicity, chloride, coho salmon)
(8): 1244 (disease control, water disinfection)
(12): 2333 (selective breeding, biochemical genetic markers, rainbow trout)
S 2274 (steroids, growth regulators, coho salmon)
T 716 (hormones, growth regulators, steelhead trout, coho salmon, pink salmon)

Fish eggs
J 34(1): 31 (development, temperature effects, Atlantic salmon)
(2): 262 (survival, pH, white sucker)
(4): 574 (hatching, pH, brook trout)
(12): 2308 (egg size, Atlantic mackerel)
S 2270 (cadmium, Pacific herring)
T 653 (hatching, environmental effects, Pacific herring, Departure Bay, Vancouver I., B.C.)
670 (processing, Pacific herring roe)
682 (processing, Pacific salmon roe)
CHN 60 (processing, Atlantic herring roe)

Fish handling
MSP 31 (manual, Fish Health Protection Regulations, Canada)
CHN 58 (human food, Atlantic herring)

Fish larvae
J 34(2): 262 (survival, pH, white sucker)
(4): 571 (samplers)
(8): 1148 (toxicity tests)
(9): 1397 (identification, golden shiner, spotfin shiner, fathead minnow)

Fish meal
S 2261 (herring meals, dimethylnitrosamine)

Fish oils
CHN 61 (fatty acids, analysis)

Fisheries
J 34(1): 19 (correlation analysis, environmental factors, fish catch, Gulf of Maine)
(2): 232 (bottom trawl fishery, Cichlidae, L. Malaŵi, Africa)
(5): 583 (catch/effort, yield predictions, stochastic processes)
(5): 710 (management, proposed research, Canada, perspective)
(10): 1576 (multispecies fisheries, exploitation, pikeperch lakes, Poland)
(10): 1703 (sport fishing, walleye, L. Nipissing, Ont.)
(10): 1725 (sport fishing, walleye, Hoover Reservoir, Ohio)
(10): 1774 (commercial fishing, yellow perch, Red Lakes, Minn.)
(10): 1830 (exploitation, yellow perch, Saginaw Bay, Mich.)
(10): 1839 (walleye, yellow perch, L. Huron)
(12): 2374 (simulation, fishery production systems)
S 2256 (stock assessment, redfish, N Nfld.-Labrador, Flemish Cap)
2339 (stock assessment, ICNAF Subdivision 3Ps, witch flounder)
2344 (distribution, abundance, coho salmon, N Pac.)
T 672 (inland fisheries, bibliographic information, Canada)
684 (commercial fishing, catch statistics, Atlantic salmon, Nfld.-Labrador)
701 (experimental fishing, northern pink shrimp, Gulf of St. Lawrence)

Fisheries Research Board of Canada
J 33 2871-3034 (1976 subject-author index, list publications)
AR 1976 (annual report)
T 620 (index, publications, staff Freshwater Institute, Winnipeg, Man., 1974-75)

Fishery economics
T 670 (processing equipment, Pacific herring roe)

Fishery management
J 34(1): 49 (utility function, fishery policy, Pacific salmons, Skeena R., B.C.)
(1): 64 (goals, Pacific salmons, Skeena R., B.C.)
(2): 183 (population dynamics, mathematical models, aquatic mammals)
(5): 710 (proposed research, Canada, perspective)
(8): 1130 (exploitation, stability regions)
(8): 1155 (mathematical models, harp seal, NW Atl.)
(9): 1419 (stocking, lake trout, Gamitagama L., Ont.)
(10): 1613 (Percidae, lakes, N Ont.)
(10): 1725 (stocking, walleye, Hoover Reervoir, Ohio)
(12): 2271 (fish yield, primary production, lakes)
S 2263 (crab fisheries, North America)
T 671 (lacustrine nursery areas, Atlantic salmon)
M 1428 (sympatric populations, coho salmon, cutthroat trout, summer)
1429 (sympatric populations, coho salmon, cutthroat trout, winter, spring)
A 343 (Pacific salmons)

Fishery products (*see also* Frozen products; Processing fishery products; Storage; Storage effects)
T 670 (processing equipment, Pacific herring roe)
725 (chemical composition, storage, Atlantic argentine)
727 (canned products, quality control, Pacific herring)

Fishery regulations
S 2263 (crab fisheries, North America)

Fishery resources
J 34(5): 604 (red sea urchin, B.C.)
MSP 35 (exploratory fishing, potential yield, groundfish, Labrador Sea)
S 2352 (northern bottlenose whale, N Atl.)
T 681 (atlas, fish, invertebrates, Canada-US boundary areas, Atl. Ocean)
720 (literature review, ocean clam, NW Atl.)

Fishery sciences
J 34(7): 1046 (resource needs, Canada, perspective)

Fishery surveys
D 37 (smooth pink shrimp, Vancouver I., B.C.)
40 (spawning grounds, Pacific cod, SW Vancouver I.)

Flemish Cap
S 2256 (stock assessment, potential yield, redfish)

Florida State, USA
J 34(3): 402 (mortality, striped mullet, Biscayne Bay)

Flounder, winter (*Pseudopleuronectes americanus*)
J 34(11): 2151 (sexual maturity, ovulation, hormone injection)

Flounder, witch (*Glyptocephalus cynoglossus*)
S 2257 (length-weight relationship, Nfld. area)
2339 (stock assessment, ICNAF Subdivision 3Ps)

Flounder, yellowtail (*Limanda ferruginea*)
S 2258 (food, Grand Bank)

Fluorescence
S 2340 (oscillations, analytical techniques)

Food; Food availability; Food consumption
J 34(7): 1028 (harpacticoid copepods)

(8): 1105 (littoral zone, nutrients, fishes, L. Memphremagog, Que.-Vt.)
(10): 1551 (Eurasian perch, reservoirs, Moscow)
(10): 1559 (Eurasian perch, pikeperch, USSR)
(10): 1643 (walleye, sauger, lakes, Minn.)
(11): 2001 (benthos, L. Memphremagog, Que.-Vt.)
(11): 2067 (spiny dogfish, B.C.)
S 2258 (yellowtail flounder, American plaice, Grand Bank)
2259 (threespine stickleback, Great Central L., Vancouver I., B.C.)

Food additives
J 34(3): 420 (frozen products, suckers)
(12): 2417 (red yeast, diets, rainbow trout, American lobster)
T 682 (processing fishery products, Pacific salmon roe)

Food chains; Food webs
J 34(4): 563 (detritus, detritus feeders, meiofaunal effect, *Zostera marina*)
(12): 2344 (pelagic environment, Peru, North Sea, Gulf of Maine)
S 2306 (octadecapentaenoic acid)
2314 (fatty acids, marine invertebrates)
2336 (detritus, chum salmon)

Food conversion
J 34(2): 269 (energy flow, gizzard shad, Acton L., Ohio)
(3): 396 (algae, brown bullhead)
S 2284 (digestive enzymes, zooplankton, Bedford Basin, N.S.)

Fossil diatoms
S 2382 (sediments, stratigraphy, Tanzania)

Fouling organisms
J 34(3): 432 (epibiotic fouling, larvae, Dungeness crab)

Fox, arctic (*Alopex lagopus*)
S 2271 (predation, ringed seal pups, Victoria I., N.W.T.)
T 694 (catch statistics, N.W.T.)

Freshwater fishes (*see also* names of fishes)
J 34(3): 388 (biogeography, distribution, Peel River basin, Y.T.)
(6): 879 (pulpmill effluents, pollution effects, Nipigon Bay, Ont.)
(10): 1849 (community composition, long-term changes, Bay of Quinte, Ont.)
S 2315 (acid precipitations, pollution effects, Canada)

Freshwater pollution (*see* Pollutants; Pollution; Pollution effects)

Frozen products
J 34(3): 420 (chemical additives, minced products, suckers)
(9): 1431 (thaw drip, Pacific salmons)
S 2264 (thawing, mullet)
2346 (oxidation, lipids, Atlantic mackerel)
T 664 (marketing, Pacific rockfishes)

Fry
J 34(4): 574 (tolerance, pH, brook trout)

Fundulus diaphanus (*see* Killifish, banded)
grandis (*see* Killifish, gulf)

Fundy, Bay of (N.B.-N.S.)
J 34(12): 2421 (dinoflagellate toxins, mortality, Atlantic herring)
S 2266 (chlorinated hydrocarbons, eggs, double-crested cormorant)

Furunculosis (*see* Diseases)

G

Gadus macrocephalus (*see* Cod, Pacific)
morhua (*see* Cod, Atlantic)

Gametogenesis
J 34(5): 604 (hermaphroditism, red sea urchin, B.C.)

Gamitagama Lake, Ont.
J 34(9): 1419 (stocking, reproduction, lake trout)

Gammarus (*see* Amphipoda)

Gasterosteus aculeatus (*see* Stickleback, threespine)

Gastropoda (*see* Periwinkles)

Gear selectivity
J 34(7): 954 (gill nets, lake whitefish, Lesser Slave L., Alta.)
(10): 1769 (walleye, Lac Des Mille Lacs, Ont.)

Genera, new (*see* New genera)

Genetics (*see also* Fish culture)
J 34(1): 123 (growth, survival, wild steelhead trout, hatchery steelhead trout)
(2): 304 (swimming performance, genotypes, rainbow trout)
(3): 384 (salinity tolerance, larvae, American oyster)
(5): 617 (biochemical genetics, biogeography, lake whitefish, western provinces, Canada)
(7): 996 (swimming stamina, rainbow trout, steelhead trout)
(8): 1236 (electrophoresis, rainbow trout, cutthroat trout)
(9): 1314 (pelvic skeleton, brook stickleback)
(12): 2333 (biochemical genetic markers, weight gain, rainbow trout)
(12): 2338 (evolution, *Esox* spp.)

Geochemistry
S 2384 (chemical elements, sediments, Relative Atomic Variation, L. Winnipeg, Man.)
T 700 (manuals, sediment analysis, suspended matter analysis)

Geological surveys
D 40 (surficial sediments, SW Vancouver I., B.C.)

Georgia, Strait of, B.C.
J 34(1): 44 (aging methods, X-ray spectrometry, spiny dogfish)
(8): 1196 (zooplankton, population dynamics, statistical analysis)
(9): 1286 (embryonic development, sexual reproduction, spiny dogfish)
T 699 (aging methods, X-ray spectrometry, growth, spiny dogfish)

Germany
J 34(10): 1670 (limnology, population dynamics, Eurasian perch, pikeperch, L. Constance)

Gill nets
J 34(7): 954 (artificial selection, lake whitefish, Lesser Slave L., Alta.)

Globicephala melaena (*see* Whale, long-finned pilot)

Glyptocephalus cynoglossus (*see* Flounder, witch)

Gonyaulax (*see* Poisons(biological))

Grand Bank (off Newfoundland)
S 2258 (food, yellowtail flounder, American plaice)

Grayling, Arctic (*Thymallus arcticus*)
J 34(3): 393 (biogeography, Peel River basin, Y.T.)

Grazing
J 34(12): 2381 (competition, calanoid copepods)

Great Central Lake, Vancouver Island, B.C.
S 2259 (distribution, feeding behavior, threespine stickleback)
T 678 (habitat improvement(fertilization), sockeye salmon)
D 27 (biological data 1975, primary production, secondary production)
30 (biological data 1976, primary production, secondary production)

Great Lakes, America (*see also* Erie, Lake; Huron, Lake; Michigan, Lake; Ontario, Lake, Superior Lake)
J 34(8): 1242 (thyroid activity, alewife, rainbow smelt)
(9): 1321 (*Paracladopelma, Saetheria*, chironomids)
(10): 1878 (population dynamics, walleye)

Greenland
T 729 (hydrocarbons, marine organisms)

Growth
J 34(1): 155 (environmental factors, crayfish, L. Tahoe, Calif.-Nev.)
(4): 509 (growth, hormones, carp)
(5): 639 (temperature effects, rainbow trout)
(7): 989 (mathematical models, Alaska king crab)
(8): 1079 (growth parameters, mathematical models)
(8): 1207 (kelp, environmental effects, Burrard Inlet, B.C.)
(9): 1373 (temperature effects, sea lamprey)
(11): 2079 (environmental effects, rock bass, La Cloche Mountain lakes, Ont.)
S 2280 (shellfish culture, American lobster)
2349 (temperature effects, fishes)
T 668 (Atlantic salmon, Soldiers Pond, Nfld.)
683 (lake chub, Mile 66 Brook, Ten Mile L., W Labrador)
699 (spiny dogfish, Strait of Georgia, B.C.)

Growth regulators
S 2274 (steroids, coho salmon)
T 716 (hormones, steelhead trout, coho salmon, pink salmon)

Gulf of...(*see* name of gulf)

Gymnocephalus cernua (*see* Ruffe)

H

Habitat
J 34(3): 360 (interspecific relationships, fishes, Michigan lakes)
(10): 1581 (pikeperch, Poland)
(10): 1936 (rivers, Percidae)
(10): 1964 (eutrophication, Percidae)

Habitat improvement(fertilization)
T 678 (sockeye salmon, Great Central L., Vancouver I., B.C.)

Habrobaenus (*see* Chironomidae)

Haddock (*Melanogrammus aeglefinus*)
S 2297 (parasites, *Eimeria gadi*, Nova Scotia banks)

Hake, blue (*Antimora rostrata*)
J 34(12): 2362 (vertical distribution, reproduction, western N Atl.)

Hake, silver (*Merluccius bilinearis*)
J 34(12): 2369 (storage, refreezing)
S 2341 (age composition, catch statistics, Scotian Shelf)

Halichoerus grypus (*see* Seal, grey)

Halitholus (*see* Coelenterata)

Halogens
S 2269 (chemical analysis, marine algae)

Harnischia complex (*see* Chironomidae)

Hastigerella (*see* Copepoda)

Heart
S 2362 (docosenoic acids, seals)
T 724 (docosenoic acids, seals)

Heavy metals
J 34(5): 649 (fallout, Lumsden L., Ont.)
(7): 899 (fallout, lakes, Flin Flon, Man.)
T 692 (pollutants, fishes, L. Huron)
693 (pollutants, fishes, L. Superior)

Hematology
J 34(1): 1 (bacterial kidney disease, coho salmon)
(7): 1034 (hemolysis, chlorine, rainbow trout)
(11): 2164 (analytical techniques, stress, salmonids)

Hermaphroditism
J 34(5): 604 (gametogenesis, red sea urchin, B.C.)

Herring, Atlantic (*Clupea harengus harengus*)
J 34(1): 105 (*Anisakis simplex*, N Atl.)
(3): 354 (tagging mortality, tag loss)
(12): 2396 (migrations, metabolism, SW Nfld.)
(12): 2402 (tagging, wounding, mortality)
(12): 2421 (mortality, dinoflagellate toxicity, Bay of Fundy)
T 723 (fat content, water content, Canadian Atl.)
CHN 58 (fish handling, human food)
60 (processing fishery products, roe, Canada)
62 (chilling storage)

Herring, Pacific (*Clupea harengus pallasi*)
J 34(12): 2288 (stock assessment, digital integrators, Alaska)
S 2270 (eggs, cadmium)
T 653 (hatching, eggs, environmental effects, Departure Bay, Vancouver I., B.C.)
670 (processing fishery products, roe, equipment)
727 (quality control, canned products)
M 1427 (research reports, bibliography)

Heterodonta
S 2345 (bivalves, Chamidae, E Pac.)

Hexagenia (*see* Ephemeroptera)

Hippoglossoides platessoides (*see* Plaice, American)
spp. (*see* Sole, flathead)

Histochemistry
S 2350 (phospholipids, olfaction, fishes)

Histology
J 34(10): 1467 (retina, walleye, sauger)
(10): 1475 (retina, perches, pikeperches)

Homarus americanus (*see* Lobster, American)

Homing behavior
J 34(8): 1085 (brown trout, L. Eucumbene, N.S.W., Australia)

Hormones
J 34(4): 509 (growth hormones, temperature effects, photoperiodicity, carp)
(8): 1242 (thyroid activity, alewife, rainbow smelt, Great Lakes)
(11): 2151 (gonadotropin, pituitary glands, American plaice)
S 2265 (premolt development, molting, American lobster)
2309 (molting, American lobster)
2312 (gonadotropin, fishes, mammals)
2351 (temperature effects, molting, American lobster)
T 716 (growth regulators, steelhead trout, coho salmon, pink salmon)

Hosts (*see* Vectors(biological))

Howe Sound, B.C.
J 34(7): 907 (production, distribution, phytoplankton)
T 654 (mathematical models, oceanography, primary production)
658 (succession, abundance, phytoplankton)
663 (industrial wastes, pollution effects, invertebrates)

Hudson Bay, Canada
S 2272 (population number, catch statistics, ringed seal)

Hungary
J 34(10): 1678 (eutrophication, exploitation, Percidae, L. Balaton)

Huron, Lake, America
J 34(10): 1839 (yield, population biology, yellow perch, walleye)
T 692 (chemical analysis, contaminants, fishes)

Hybognathus nuchalis (*see* Minnow, silvery)

Hybrids
J 34(8): 1236 (electrophoresis, rainbow trout, cutthroat trout)
(12): 2338 (artificial hybrids, Amur pike, North American esocids)

Hydrobaenus (*see* Chironomidae)

Hydrocarbons
J 34(3): 347 (oil detection, analytical techniques, NW Atl.)

(11): 2156 (seasonal variations, Jeddore Harbour, N.S.)
S 2266 (chlorinated hydrocarbons, eggs, double-crested cormorant, Bay of Fundy)
2281 (lubricating oils, wax esters, infrared spectrometry)
2311 (terpenes, sagebrush)
2333 (ethers, sagebrush)
2353 (pollution monitoring, mixed function oxidases, marine organisms)
2371 (organochlorine compounds, aquatic organisms)
T 729 (marine organisms, sediments, W Greenland)

Hydrography
T 686 (Saint John R. Estuary, N.B)

Hyperoodon ampullatus (*see* Whale, bottlenose)

I

Ichthyotron (*see* Equipment)

ICNAF (*see* International Commission for the Northwest Atlantic Fisheries)

Ictalurus melas (*see* Bullhead, black)
nebulosus (*see* Bullhead, brown)

Identification keys
J 34(9): 1326 (*Paracladopelma, Saetheria,* chironomids)
B 195 (Orthocladiinae, *Hydrobaenus, Trissocladius, Paratrissocladius, Zalutschia,* chironomids)
196 (*Nanocladius, Pseudochironomus, Harnischia* complex, chironomids)
197 (female genitalia, Chironomidae, Nematocera)
S 2348 (poachers, B.C.)

IHNV (infectious hematopoietic necrosis virus) (*see* Viruses)

Immunology
J 34(2): 203 (methodology, coho salmon, chinook salmon)
(7): 1026 (vibriosis, coho salmon)
(8): 1118 (*Aeromonas salmonicida,* leucocytolytic factor)
(9): 1293 (primary immune response, tritium irradiation, rainbow trout)

Impingement
J 34(12): 2316 (juveniles, striped mullet, spot, pinfish)

Inconnu (*Stenodus leucichthys*)
J 34(1): 129 (migrations, tagging, Alaska)

Incubation
J 34(2): 262 (eggs, survival, pH, white sucker)
(3): 410 (eggs, *Pontella meadi*)
T 689 (substrate incubators, reports, Pacific salmons)

Indicator species
J 34(4): 493 (aquatic communities, mercury, controlled conditions)
(7): 962 (zooplankton, Experimental Lakes Area lakes, NW Ont.)

Industrial wastes (*see also* Pollutants; Pollution; Pollution effects)
J 34(2): 215 (wastewater, coho salmon)
T 663 (pollution effects, invertebrates, Howe Sound, B.C.)

Information handling
M 1426 (methodology, reports)

Information retrieval
T 619 (filing system, abstracts)
620 (publications, Freshwater Institute, Winnipeg, Man.)
CNG 106 (pollution monitoring, computer programs)

Inlets(waterways)
S 2289 (variations, budget, primary production)

Insecta
B 197 (female genitalia, morphology)

Insecticides (*see* Pesticides)

International Commission for the Northwest Atlantic Fisheries (ICNAF)
S 2256 (stock assessment, potential yield, redfish, northern Nfld.-Labrador, Flemish Cap)
2278 (catch statistics, catch/effort, potential yield, groundfish, Scotian Shelf)
2286 (stock assessment, potential yield, Atlantic cod, Scotian Shelf)
2325 (stock assessment, pollock, Divisions 4VWX + Subarea 5)
2339 (stock assessment, witch flounder, Subdivision 3Ps)
2341 (age composition, catch statistics, silver hake, Scotian Shelf)
T 681 (atlas, fishery resources, Canada-US boundary areas)

Interspecific relationships
J 34(1): 73 (predation, zooplankton, mathematical models)
(1): 113 (competition, *Chaoborus* spp., Matamek R. system, Que.)
(3): 360 (habitat, fishes, Michigan lakes)
(7): 976 (seals, Beaufort Sea)
(10): 1626 (competition, walleye, smallmouth bass, lakes, Minn.)
(10): 1633 (white sucker, yellow perch, walleye, Wilson L., Minn.)
(10): 1655 (unexploited populations, walleye, yellow perch, West Blue L., Man.)
(10): 1678 (fishes, L. Balaton, Hungary)
(10): 1861 (Percidae, other freshwater fishes, L. Erie)

(10): 1941 (aquatic communities, *Perca*, *Stizostedion*)
S 2259 (feeding behavior, threespine stickleback, sockeye salmon, Great Central L., Vancouver I., B.C.)
M 1428 (sympatric populations, coho salmon, cutthroat trout, summer, simulation)
1429 (sympatric populations, coho salmon, cutthroat trout, winter, spring, simulation)

Introduced species
J 34(10): 1464 (Eurasian perch, Australia)
(10): 1678 (fishes, L. Balaton, Hungary)

Invertebrates
J 34(6): 824 (ecological zonation, pollution effects, Nipigon Bay, Ont.)
S 2254 (sampling, samplers, Lymn Creek, B.C.)
2293 (excretory products, degradation)
2299 (locomotion, petroleum, pollution effects, *Onisimus*, *Halitholus*)
2314 (fatty acids, food webs)
2364 (biased sex ratios)
2366 (cocoons, *Eukiefferiella claripennis*, Harris R., N.W.T.)
T 663 (pollution effects, industrial wastes, Howe Sound, B.C.)
681 (atlas, fishery resources, Canada-US boundary areas, Atl. Ocean)

Ions
J 34(11): 2210 (winterkill lakes, Man.)

Iowa State, USA
J 34(10): 1792 (population dynamics, stocking, walleye, Clear L.

Irradiation
J 34(8): 1244 (water treatment, disease control)
(9): 1293 (tritium irradiation, primary immune response, rainbow trout)

J

James Bay, Canada
S 2272 (population number, catch statistics, ringed seal)
T 661 (zoobenthos, biological data)

Johnstone Strait, B.C.
J 34(5): 697 (tidal currents, estuarine circulation)

K

Karyotypes
J 34(7): 1041 (gila trout)

Kelp (*see* Seaweeds)

Keys, identification (*see* Identification keys)

Killifish, banded (*Fundulus diaphanus*)
J 34(8): 1105 (distribution, food availability, L. Memphremagog, Que.-Vt.)

Killifish, gulf (*Fundulus grandis*)
J 34(4): 568 (avoidance, pulpmill effluents)

L

La Cloche Mountain lakes, Ont.
J 34(11): 2079 (environmental conditions, growth, rock bass)

Laboratory techniques
J 34(5): 749 (methodology, temperature preference, fishes)

Labrador, Nfld.
T 683 (age composition, growth, sexual maturity, lake chub, Mile 66 Brook, Ten Mile L.)
684 (catch statistics, Atlantic salmon)

Labrador Sea
MSP 35 (exploratory fishing, potential resources, groundfish)

Lac Des Mille Lacs, Ont.
J 34(10): 1769 (exploitation, commercial fishing, sport fishing, walleye)

Lagodon rhomboides (*see* Pinfish)

Lake ice
MSP 34 (monitoring, Thousand Islands-St. Lawrence R., Skylab)

Lake morphology
T 674 (morphometry, Schist L., Man.)

Lake of...(*see* name of lake)

Lake of the Woods, Ont.-Minn., America
J 34(10): 1784 (yield, long-term changes, walleye, sauger, yellow perch)

Lamprey, sea (*Petromyzon marinus*)
J 34(1): 159 (body walls, development, morphology)
(9): 1373 (growth, temperature effects, host mortality, controlled conditions)

Lampricide (*see* Pollutants; Pollution; Pollution effects)

Landing statistics (*see* Fish catch statistics)

Lateral line
J 34(10): 1492 (sense organs, ontogeny, Eurasian perch, ruffe)

Lead; Lead compounds
J 34(4): 501 (toxicity, ALA-D, enzyme indicator, fishes)
S 2331 (spectroscopic techniques, alkyls, fish tissues)

Leiostomus xanthurus (*see* Spot)

Length-weight relationships
S 2257 (witch flounder, Nfld. area)

Lepomis cyanellus (*see* Sunfish, green)
gibbosus (*see* Pumpkinseed)
macrochirus (*see* Bluegill)

Leptodiaptomus (*see* Zooplankton)

Leptonacea
S 2342 (new genus, *Rhamphidonta*, NE Pac.)

Lernaeopodidae (copepods)
J 34(2): 191 (ectoparasites, *Salmincola californiensis*, sockeye salmon)

Lesser Slave Lake, Alta.
J 34(7): 942 (population dynamics, life history, lake whitefish)
(7): 954 (artificial selection, gill nets, lake whitefish)

L'Etang Inlet, N.B.
T 718 (pulpmill effluents, pollution effects, sublittoral benthos)

Lethal limits (*see* Toxicants; Toxicity; Toxicity tests)

Life cycle; Life history
J 34(1): 113 (*Chaoborus* spp., Matamek R. system, Que.)
(2): 247 (*Cricotopus bicinctus, C. mackenziensis*, Fort Simpson area, N.W.T.)
(7): 942 (lake whitefish, Lesser Slave L., Alta.)
(10): 1464 (environmental factors, Eurasian perch, Australia)
T 695 (*Macrocystis integrifolia*, B.C.)
A 344 (ringed seal, Victoria I., N.W.T.)
347 (harp seal, hooded seal, N Atl.)

Light effects
J 34(10): 1481 (feeding behavior, reproductive behavior, walleye)
S 2248 (darkness survival, algae)
2250 (photosynthesis, phytoplankton, mathematical models)
2355 (photosynthesis, phytoplankton, N.S.)

Light penetration
D 33 (water transparency, Experimental Lakes Area lakes, NW Ont.)

Limacina (*see* Vectors(biological))

Limanda aspera (*see* Sole, yellowfin)
ferruginea (*see* Flounder, yellowtail)

Limnology
J 34(10): 1592 (lakes, ecological associations, fishes, Ont.)
(10): 1670 (L. Constance, Germany)
(12): 2255 (lakes, primary production)
(12): 2271 (lakes, fish yield)
T 672 (bibliographic information, Canada)
691 (chemical properties, physical properties, Red Indian L., Nfld.)
711 (lakes, benthos, N.W.T.)
D 26 (lakes, Avalon Peninsula, Nfld.)
29 (limnological data, lakes, B.C.)
31 (limnological data, Henderson L., B.C.)
32 (limnological data, Experimental Lakes Area lakes, NW Ont.)
33 (limnological data, light penetration, Experimental Lakes Area lakes, NW Ont.)

Lingcod (*Ophiodon elongatus*)
J 34(9): 1305 (aging methods)

Lipids (*see* Fats)

Literature reviews
J 34(9): 1261 (underwater biotelemetry)
(10): 1684 (Percidae, Finland)
T 720 (fishery resources, biological data, ocean clam, NW Atl.)

Littoral zone
J 34(1): 167 (species diversity, fishes, L. Memphremagog, Que.-Vt.)
(3): 360 (habitat, interspecific relationships, fishes, Michigan lakes)
(8): 1105 (community composition, food availability, fishes, L. Memphremagog, Que.-Vt.)

Littorina (*see* Periwinkles)

Liver
J 34(5): 633 (temperature effects, feeding, liver-somatic index, largemouth bass)

Lobster, American (*Homarus americanus*)
J 34(3): 379 (mathematical models, landings, Magdalen Is., Gulf of St. Lawrence)
(5): 688 (storage, recirculating systems, water quality control) (corrections on J 34(8): 1256)
(11): 2203 (feeding behavior, controlled conditions)
(12): 2417 (red yeast, diets, pigments)
S 2253 (anesthesia)
2262 (nutrition studies, eyestalk ablation)
2265 (premolt development, molting, hormones)
2280 (growth, reproduction, shellfish culture)
2309 (molting, hormones)
2323 (toxicity, alkyldinitrophenols)
2351 (molting, hormones, temperature effects)

Locomotion
J 34(1): 151 (swimming speeds, salinity effects, temperature effects, coho salmon)
(2): 304 (swimming performance, genotypes, rainbow trout)

(7): 996 (swimming stamina, phenotypes, rainbow trout, steelhead trout)
(12): 2316 (swimming speeds, juveniles, striped mullet, spot, pinfish)
S 2299 (activity patterns, pollution effects, petroleum, *Onisimus affinis*, *Halitholus cirrattus*)

Lumpfish (*Cyclopterus lumpus*)
J 34(1): 134 (cell line)

Lumsden, Lake, Ont.
J 34(5): 649 (fallout sulfur compounds, heavy metals)

M

Macaca fascicularis (*see* Monkey)

Mackenzie River Valley, N.W.T.
S 2319 (sediments, composition, reactivity)

Mackerel, Atlantic (*Scomber scombrus*)
J 34(3): 439 (chilling storage, refrigerated sea water)
(12): 2308 (egg size, spawning seasons, Gulf of St. Lawrence)
S 2255 (freezing storage, quality control)
2296 (oxidation, lipids)
2346 (oxidation, lipids, frozen products)

Macrocystis integrifolia (*see* Alga, brown)

Magdalen Islands, Gulf of St. Lawrence
J 34(3): 379 (mathematical models, landings, American lobster)

Maine, Gulf of
J 34(1): 19 (fish catch, environmental factors, correlation analysis)
(12): 2344 (food chains, pelagic environment)

Maine State, USA
J 34(2): 281 (viruses (PEN), new records, alewife, coastal streams)

Mallotus villosus (*see* Capelin)

Manitoba (Province), Canada (*see also* Schist L., West Blue L., Winnipeg, L.)
J 34(7): 899 (fallout, heavy metals, lakes, Flin Flon)
(11): 2210 (winterkill lakes, ions, nutrients)
S 2365 (eutrophic lakes, nitrogen)

Manuals
MSP 31 (Fish Health Protection Regulations, Canada)
T 700 (analytical techniques, sediment analysis, suspended matter analysis)
M 1426 (reports, information handling)

Marine mammals (*see* Aquatic mammals)

Marine pollution (*see* Pollutants; Pollution; Pollution effects)

Matamek River system, Que.
J 34(1): 113 (interspecific competition, *Chaoborus*)
(2): 294 (sex ratio, sexual identification, American eel)

Mathematical models
J 34(1): 73 (interspecific relationships, predation, zooplankton)
(2): 177 (DDT, accumulation, *Calanus finmarchicus*)
(2): 183 (population dynamics, resource management, aquatic mammals)
(2): 286 (eutrophication, ecosystems, phosphorus, L. Ontario)
(2): 290 (differential equations, stomach content, fishes)
(3): 379 (landings, American lobster, Magdalen Is., Gulf of St. Lawrence)
(3): 425 (stock-recruitment curves)
(5): 583 (stochastic processes, catch/effort, yield predictions)
(6): 805 (aquatic plumes, pulpmill effluents, dispersion, Nipigon Bay, Ont.)
(7): 989 (stochastic processes, growth, Alaska king crab (corrections on J 34(8): 1256)
(8): 1079 (statistical analysis, growth parameters)
(8): 1130 (stability regions, Salmonidae)
(8): 1155 (stochastic processes, stock assessment, fishery management, harp seal, NW Atl.)
(10): 1900 (temperature effects, year-class strength, Percidae)
(10): 1922 (energy budget, walleye, yellow perch)
(10): 1972 (population dynamics, walleye, L. Erie)
(11): 2124 (population dynamics, fishes)
(11): 2210 (ions, nutrients, winterkill lakes, Man.)
S 2250 (photosynthesis, light effects, phytoplankton)
2285 (energy flow, plankton, ecosystems)
2357 (primary production, phytoplankton)
2372 (biological predictions, marine environment, phytoplankton)
2373 (biological predictions, pelagic marine ecosystems)
T 654 (oceanography, primary production, Howe Sound, B.C.)

Megaptera novaeangliae (*see* Whale, humpback)

Melanogrammus aeglefinus (*see* Haddock)

Memphremagog, Lake, Que.-Vt., America
J 34(1): 167 (species diversity, fishes)
(8): 1105 (community composition, food availability, fishes)
(11): 2001 (benthos, production)

Menhaden, Atlantic (*Brevoortia tyrannus*)
S 2307 (lipids, fatty acids

Mercury
J 34(1): 147 (cleithrum bones, Atlantic cod)
(4): 493 (pollution effects, aquatic communities, controlled conditions)
(12): 2295 (population dynamics, zooplankton, simulation)
CNG 105 (pollution monitoring, seawater, fresh water, B.C.)

Merluccius bilinearis (*see* Hake, silver)

Mesodinium rubrum (ciliates)
J 34(3): 413 (symbiosis, alga, red tides, Passamaquoddy Bay, N.B.)

Metabolism
J 34(1): 164 (metabolic measurements, copepods)
(12): 2396 (Atlantic herring, SW Nfld.)
S 2371 (organochlorine compounds, aquatic organisms)
2376 (pesticides, aquatic animals)
T 675 (feeding, sockeye salmon)

Metabronema (*see* Nematoda)

Methodology
J 34(2): 225 (measurement, surface area, marine crustaceans)
(2): 266 (chromosome preparation, tissues, fishes)
(5): 749 (laboratory techniques, temperature preference, fishes)
S 2260 (purification, proteins, venom, *Crotalus admenteus*)
2359 (quantification, steroids, northern starfish)
2380 (purification, Pacific oysters)
2381 (extraction, steroids, purple starfish)
T 619 (filing system, abstracts)
666 (pollution monitoring, pulpmill effluents, Stuart Channel, B.C.)
689 (substrate incubators, Pacific salmons)
D 32 (incubator technique, phytoplankton, photosynthesis, Experimental Lakes Area lakes, NW Ont.)
CHN 61 (analysis, fish oils, fatty acids)

Michigan, Lake, America
J 34(3): 325 (seasonal distribution, ecology, *Echinorhynchus salmonis*)
(4): 537 (silicon cycle, phytoplankton, diatoms)
(4): 545 (silicon cycle, diatom frustules)
(4): 552 (silicon cycle, primary production, diatoms)
(10): 1821 (population dynamics, yellow perch)
(10): 1830 (population characteristics, temperature effects, exploitation, yellow perch, Saginaw Bay)
(12): 2280 (chlorophyll *a*, distribution)
(12): 2413 (algal settlements, red alga)

Michigan State, USA
J 34(3): 360 (habitat, interspecific relationships, fishes)
(11): 2041 (population dynamics, production, crayfish)
(11): 2056 (experimental fishing, crayfish)

Micropterus dolomieui (*see* Bass, smallmouth)
punctulatus (*see* Bass, spotted)
salmoides (*see* Bass, largemouth)

Microstomus pacificus (*see* Sole, Dover)

Midges (*see* Chironomidae)

Migrations
J 34(1): 129 (inconnu, Alaska)
(1): 142 (potamodromous migrations, smallmouth bass, L. Simcoe, Ont.)
(9): 1422 (ocean migration rates, American shad, Atl. coast)
(10): 1890 (Percidae)
(12): 2396 (Atlantic herring, SW Nfld.)
T 667 (aquatic mammals, Central Arctic Region)
680 (aquatic mammals, Cape Hay, Bylot I., N.W.T.)

Minnesota State, USA
J 34(10): 1626 (interspecific relationships, walleye, smallmouth bass)
(10): 1633 (interspecific relationships, white sucker, yellow perch, walleye, Wilson L.)
(10): 1643 (food consumption, walleye, sauger)
(10): 1774 (population dynamics, yield, walleye, yellow perch, Red Lakes)

Minnow, bluntnose (*Pimephales notatus*)
J 34(8): 1105 (distribution, food availability, L. Memphremagog, Que.-Vt.)

Minnow, fathead (*Pimephales promelas*)
J 34(9): 1397 (larvae, identification)
(11): 2089 (DDT, toxicity, food chains)
(12): 2323 (cyanides, sulfur compounds, toxicity)

Minnow, silvery (*Hybognathus nuchalis*)
J 34(8): 1105 (distribution, food availability, L. Memphremagog, Que.-Vt.)

Missouri River, South Dakota State, USA
J 34(10): 1748 (population dynamics, yellow perch, sauger, walleye, reservoirs)

Molting
S 2265 (hormones, American lobster)
2309 (hormones, chemical composition, American lobster)
2351 (hormones, temperature effects, American lobster)

Monitoring (*see also* Pollution monitoring)
MSP 34 (sea ice, lake ice, Gulf of St. Lawrence, Thousand Islands-St. Lawrence R., Skylab)

Monkey (*Macaca fascicularis*)
S 2294 (diets, fats, pathology)
2343 (diets, fats, fatty acids)
T 719 (diets, fats, pathology)

Monodon monoceros (*see* Narwhal)

Morone americana (*see* Perch, white)

Morphology(organisms)
J 34(1): 98 (*Cricotopus, bicinctus*-group, chironomids, Fort Simpson area, N.W.T.)
(1): 105 (*Anisakis simplex*, N Atl.)
(1): 159 (body walls, development, sea lamprey)
(4): 455 (flathead sole, N Pac.)
(4): 463 (*Pleuroxus denticulatus*)
(9): 1314 (pelvic skeleton, brook stickleback)
(9): 1397 (larvae, golden shiner, spotfin shiner, fathead minnow)
(10): 1450 (Percidae)
(10): 1504 (Eurasian perch, yellow perch)
(10): 1515 (walleye, pikeperch)
(10): 1890 (Percidae)
(12): 2354 (*Baeoctenus bicolor*, chironomid)
B 197 (female genitalia, Chironomidae, Nematocera)
S 2342 (new genus, *Rhamphidonta*, NE Pac.)

Mortality
J 34(3): 402 (striped mullet, Biscayne Bay, Fla.)
(5): 639 (temperature effects, rainbow trout)
(9): 1373 (hosts, sea lamprey)

Mouthbrooder, mozambique (*Tilapia mossambica*)
J 34(3): 332 (otoliths, daily rings, controlled conditions)

Moxostoma macrolepidotum (*see* Sucker, northern redhorse)

Mugil cephalus (*see* Mullet, striped)

Mullet
S 2264 (frozen products, thawing)

Mullet, striped (*Mugil cephalus*)
J 34(3): 402 (mortality causes, *Eubacterium tarantellus*, Biscayne Bay, Fla.)
(12): 2316 (swimming speed, juveniles)

Muskellunge (*Esox masquinongy*)
J 34(12): 2338 (artificial hybrid)

Myxosporidia
J 34(7): 933 (*Ceratomyxa shasta*, Salmonidae)

N

Nannopus (*see* Copepoda)

Nanocladius (*see* Chironomidae)

Narwhal (*Monodon monoceros*)
T 667 (distribution, migrations, Central Arctic Region)
680 (migrations, census, Cape Hay, Bylot I., N.W.T.)
694 (catch statistics, N.W.T.)

Nematocera
B 197 (female genitalia, morphology, phylogeny, identification keys)

Nematoda
J 34(1): 105 (morphology, population genetics, *Anisakis simplex*, N Atl.)
(7): 887 (codworm, public health)

S 2367 (new genus, *Caballeronema, Metabronema wardlei*, Pac. coast, Canada)

Nephthys (*see* Polychaeta)

Netherlands
J 34(10): 1710 (population dynamics, pikeperch, Eurasian perch, ruffe, L. IJssel, other lakes)

New Brunswick (Province), Canada (*see* Fundy, Bay of; L'Etang Inlet; Passamaquoddy Bay; Saint John River Estuary)

New genera
J 34(9): 1321 (*Saetheria*, chironomid)
(12): 2354 (*Habrobaenus*, chironomid)
B 195 (*Baeoctenus, Oliveria, Freemaniella*, chironomids)
196 (*Cyphomella, Chernovskii, Beckiella, Robackia*, chironomids)
S 2342 (*Rhamphidonta*, NE Pac.)
2367 (*Caballeronema*, Pac. coast, Canada)

New records
J 34(3): 325 (*Echinorhynchus salmonis*, vector, L. Michigan)
S 2348 (*Stellerina xyosterna, Xeneretmus leiops*, poachers, B.C.)

New species
J 34(1): 99 (*Cricotopus mackenziensis*, chironomid, Fort Simpson area, N.W.T.)
(3): 402 (*Eubacterium tarantellus*)
(9): 1321 (*Saetheria reissi, Paracladopelma winnelli*, chironomids)
(12): 2354 (*Habrobaenus hudsoni*, chironomid)
B 195 (*Baeoctenus* sp., *Hydrobaenus* spp., *Zalutschia* spp., *Bryophaenocladius* sp., chironomids)
196 (*Nanocladius* spp., *Pseudochironomus* spp., *Cryptotendipes* sp., *Cyphomella* spp., *Robackia* sp., chironomids)
S 2345 (*Chama* spp., bivalves, E Pac.)

New York State, USA (*see* Oneida Lake)

Newfoundland (Province), Canada (*see also* Labrador, North Harbour R., Red Indian L., Soldiers Pond)
J 34(9): 1436 (geographical distribution, baleen whales)

(11): 2104 (reproductive organs, blood, seasonal variations, sea scallop)
(12): 2396 (tagging, migrations, metabolism, Atlantic herring)
S 2257 (length-weight relationships, witch flounder)
T 671 (lacustrine nursery areas, Atlantic salmon, Salmon Pond)
684 (catch statistics, commercial fishing, Atlantic salmon)
D 26 (limnology, fish populations, lakes, Avalon Peninsula)

Newfoundland-Labrador
S 2256 (stock assessment, potential yield, redfish)

Nickel
S 2291 (sediments, Saguenay fjord, Que.)

Nipigon Bay, Lake Superior, Ont.
J 34(6): 771 (environmental surveys, pulpmill effluents)
(6): 776 (pulpmill effluent plumes, chemical analysis)
(6): 784 (pulpmill effluent plumes, oxygen consumption, caloric changes)
(6): 791 (pulpmill effluent plumes, suspended matter)
(6): 798 (pulpmill effluent plumes, organic compounds)
(6): 805 (pulpmill effluent plumes, chemistry)
(6): 817 (pulpmill effluents, pollution effects, bottom sediments)
(6): 824 (pulpmill effluents, pollution effects, macroinvertebrates, ecological zonation)
(6): 830 (pulpmill effluents, organic compounds, distribution)
(6): 838 (pulpmill effluents, dehydroabietic acid, sediments)
(6): 844 (pulpmill effluents, pollution effects, bacteria)
(6): 850 (pulpmill effluents, organic compounds, pollutants, fishes)
(6): 856 (pulpmill effluents, pollution effects, productivity, algae)
(6): 879 (pulpmill effluents, pollution effects, behavior, fishes)

Nipissing, Lake, Ont.
J 34(10): 1703 (sport fishing, yield, walleye)

Nitrites
J 34(4): 486 (nitrite toxicity, chloride effects, coho salmon)
S 2261 (fish meal)

Nitrogen; Nitrogen compounds
S 2268 (growth, marine phytoplankton)
2283 (excretion, zooplankton, Bedford Basin, N.S.)
2310 (urea, algal growth)
2318 (ammonium, urea, freshwater algae)
2365 (nitrogen cycle, eutrophic lakes, SW Man.)
2378 (organic suspended matter, variability, Halifax-Bermuda)
T 721 (suspended matter, sediments, St. Georges Bay, N.S.)

Nitrogen fixation
J 34(3): 416 (bioassays, green sea urchin)
S 2247 (methane oxidation, lakes)

North America
J 34(10): 1602 (lakes, biomass, yield, walleye, yellow perch)
S 2263 (fishery management, fishery regulations, crabs)

North Harbour River, Nfld.
T 697 (biological data, environmental data)

North Sea
J 34(12): 2344 (food chains, pelagic environment)

Northwest Territories (Territory), Canada (*see also* Mackenzie River Valley; Victoria I.)
J 34(1): 98 (new species, distribution, *Cricotopus, bicinctus*-group, Fort Simpson area)
(2): 247 (life history, *Cricotopus bicinctus, C. mackenziensis*, Fort Simpson area)
(2): 254 (oil contamination, *Crictopus bicinctus, C. mackenziensis*, Fort Simpson area)
S 2271 (predation, ringed seal pups, arctic fox)
2366 (larval cocoons, *Eukiefferiella claripennis*, Harris R.)
T 680 (migrations, census, aquatic mammals, Cape Hay, Bylot I., N.W.T.)
685 (data, physical oceanography, chemical oceanography, Eskimo Lakes)
694 (catch statistics, aquatic mammals, arctic fox, polar bear)
711 (limnology, benthos, lakes)

Notemigonus crysoleucas (*see* Shiner, golden)

Notropis cornutus (*see* Shiner, common)
rubellus (*see* Shiner, rosyface)
spilopterus (*see* Shiner, spotfin)
telescopus (*see* Shiner, telescope)
volucellus (*see* Shiner, mimic)

Nova Scotia (Province), Canada (*see also* Bedford Basin; Bluff L.; Fundy, Bay of; Sable I.; St. Georges Bay, St. Margaret's Bay)
J 34(11): 2156 (seasonal variations, fatty acids, hydrocarbons, Jeddore Harbour)
S 2297 (parasites, haddock, *Eimeria gadi*)
2304 (fatty acids, rainbow smelt, Jeddore Harbour)
2305 (fatty acids, rainbow smelt, Jeddore Harbour)
2381 (steroids, saponins, purple starfish)
T 706 (remote sensing, chlorphylls, Yarmouth)

Nucleic acids
J 34(1): 83 (DNA, RNA, ontogenesis, rainbow trout)

Nursery ponds
T 671 (Atlantic salmon, Salmon Pond, Nfld)

Nutrient budgets
J 34(7): 918 (atmospheric precipitations, phosphorus)

Nutrient cycles
J 34(7): 1004 (enrichment, Scotian Shelf)

Nutrients(mineral)
J 34(11): 2117 (distribution, St. Lawrence R., Estuary)
(11): 2210 (winterkill lakes, Man.)
S 2277 (phosphorus, carbon, nitrogen, interrelationships, Experimental Lakes Area lakes, NW Ont.)
2383 (sediments, eutrophic lakes, Experimental Lakes Area lakes, NW Ont.)
T 685 (Eskimo Lakes, N.W.T.)
708 (Continental Shelf, N.S. area)

Nutrition; Nutritional requirements (*see* Diets)

O

Occella verrucosa (*see* Poacher, warty)

Ocean dumping
T 662 (pollution effects, heart cockle, Dungeness crab, controlled conditions)

Oceanographic data
D 28 (water sampling, Rupert Inlet, Holberg Inlet, Quatsino Sound, B.C.)
34 (transport computations 1976, Pac. Ocean)
35 (transport computations 1960-1975, Pac. Ocean)

Oceanography (*see* Physical oceanography; Chemical oceanography)

Oceanology
B 198 (tsunamis, world oceans)

Odobenus rosmarus (*see* Walrus)

Ohio State, USA
J 34(2): 269 (energy flow, food conversion, insect remains, gizzard shad, Acton L.)
(10): 1725 (sport fishing, fishery management, walleye, Hoover Reservoir)

Oil pollution (*see* Pollutants; Pollution; Pollution effects)

Olfaction
S 2308 (amino acids, stimuli, fishes)
2350 (histochemistry, phospholipids, fishes)

Oligochaeta
S 2332 (catalog, terminology, taxonomy)

Oligotrophic lakes
J 34(9): 1410 (allocthonous particulate carbon, secondary production, Findley L., Wash.)
T 678 (habitat improvement, sockeye salmon, Great Central L., Vancouver I., B.C.)

Oncorhynchus gorbuscha (*see* Salmon, pink)
keta (*see* Salmon, chum)
kisutch (*see* Salmon, coho)
nerka (*see* Salmon, sockeye)
spp. (*see* Salmon (Pacific in general)
tshawytscha (*see* Salmon, chinook)

Oneida Lake, New York State, USA
J 34(7): 925 (predation, yellow perch)
(10): 1812 (population dynamics, competition, walleye)

Onisimus (*see* Amphipoda)

Ontario (Province), Canada (*see also* Chalk R.; Gamitagama L.; La Cloche Mountain lakes; Lac Des Mille Lacs; Lake of the Woods; Lumsden L., Nipigon Bay; Nipissing, L.; Ontario, L.; Rainy L.; Simcoe, L.; St. Clair, L.)
J 34(7): 962 (lakes, indicator species, zooplankton)
(10): 1592 (limnology, ecological associations, fishes, lakes)
(10): 1613 (lakes, community composition, yield, Percidae)

Ontario, Lake, America (*see also* Quinte, Bay of)
J 34(2): 286 (ecosystems, phosphorus, mathematical models)
(8): 1240 (carbon budget)

Ontogenesis
J 34(1): 83 (protein biosynthesis, rainbow trout)

Ontogeny
J 34(10): 1492 (sense organs, lateral line, Eurasian perch, ruffe)

Ophiodon elongatus (*see* Lingcod)

Orcinus orca (*see* Whale, killer)

Orconectes (*see* Crayfish)

Oregon State, USA
S 2252 (production, crayfish, Berry Creek Willamette R. drainage)
T 690 (stock assessment, Pacific ocean perch)

Organic acids
J 34(6): 838 (dehydroabietic acid, sediments, pulpmill effluents, Nipigon Bay, Ont.)
S 2361 (esters, separation, chromatographic techniques)

Organic compounds
J 34(6): 798 (dispersion, pulpmill effluents, Nipigon Bay, Ont.)
(6): 830 (distribution, pulpmill effluents, Nipigon Bay, Ont.)
(6): 850 (pollutants, fishes, Nipigon Bay, Ont.)

Organic suspended matter
S 2378 (carbon, nitrogen, Halifax-Bermuda)
2379 (sedimentation, aquatic communities)

Orientation behavior
J 34(2): 300 (electronic equipment, Ichthyotron, largemouth bass, smallmouth bass)
(5): 734 (temperature preference, fishes)

Orthocladiinae
B 195 (identification keys, chironomids)

Osmerus mordax (*see* Smelt, rainbow)

Osmoregulation
T 705 (smolts, Pacific salmons)

Ostrea edulis (*see* Oyster, European flat)

Otoliths; Otolith reading
J 34(3): 332 (daily rings, *Lepomis* spp., *Tilapia mossambica*, controlled conditions)
(11): 2008 (aging methods, capelin)
S 2350 (aging methods, Atlantic cod)

Otter, sea (*Enhydra lutris*)
A 349 (stocking, Vancouver I., B.C.)

Ovulation
J 34(11): 2151 (hormone injection, winter flounder)

Oxidation
S 2247 (methane oxidation, Experimental Lakes Area lakes, NW Ont.)
2296 (lipids, Atlantic mackerel)
2329 (ozonolysis)
2346 (lipids, Atlantic mackerel)

Oxygen
J 34(11): 2218 (oxygen measurement, seawater, analytical techniques)

Oxygen consumption
J 34(6): 784 (pulpmill effluent plumes, caloric changes, Nipigon Bay, Ont.)
S 2347 (electron transport system, *Daphnia*, crayfish)

Oyster, Atlantic (*Crassostrea virginica*) (American oyster)
J 34(3): 384 (genetics, larvae, salinity tolerance)
S 2303 (lipids, fatty acids, storage effects)

Oyster, European flat (*Ostrea edulis*)
S 2303 (lipids, fatty acids, storage effects)

Oyster, Pacific (*Crassostrea gigas*)
S 2380 (purification, methodology)
T 652 (pulpmill effluents, pollution effects, Crofton, B.C.)

Ozone
J 34(3): 429 (water treatment, disease control)

P

Pacifastacus (*see* Crayfish)

Pacific Ocean
J 34(4): 455 (morphology, taxonomy, flathead sole)
S 2344 (catch statistics, distribution, abundance, coho salmon, N Pac.)
2345 (distribution, taxonomy, Chamidae)
2367 (*Caballeronema*, nematode)
T 657 (catch/effort, groundfish, Pac. coast)
D 34 (transport computations 1976)
35 (transport computations 1960-1975)
36 (fish catch statistics, trawling, PMFC areas 3B, 3C, sub-areas)
38 (biological data, primary production, Ocean Weather Station 'P')

Pagophilus groenlandicus (*see* Seal, harp)

Pandalus borealis (*see* Shrimp, northern pink)
jordani (*see* Shrimp, smooth pink)
platyceros (*see* Prawn, spot)

Paracladopelma (*see* Chironomidae)

Paralithodes camtschatica (*see* Crab, Alaska king)

Parasites; Parasitism
J 34(2): 191 (*Salmincola californiensis*, sockeye salmon)
(3): 325 (seasonal distribution, ecology, *Echinorhynchus salmonis*, L. Michigan)
(5): 706 (*Eubothrium salvelini*, sockeye salmon)
(7): 933 (*Ceratomyxa shasta*, resistance, susceptibility, Salmonidae)
S 2297 (*Eimeria gadi*, haddock, Nova Scotia banks)

Paratrissocladius (*see* Chironomidae)

Parthenogenesis
S 2317 (*Hexagenia rigida*)

Passamaquoddy Bay, N.B.
J 34(2): 273 (fecundity, common rock barnacle)
(3): 413 (red tides, *Mesodinium rubrum*)

Pathology
S 2294 (fats, diets, monkeys)
2362 (docosenoic acids, heart, seals)
T 719 (fats, diets, monkeys)
724 (docosenoic acids, heart, seals)

Perca flavescens (*see* Perch, yellow)
fluviatilis (*see* Perch, Eurasian)
spp. (see Perches)

Perch, Eurasian (*Perca fluviatilis*)
J 34(10): 1464 (biogeography, life cycle, environmental factors, Australia)
(10): 1492 (sense organs, lateral line, ontogeny)
(10): 1504 (morphology, physiology, ecology)
(10): 1551 (development, food, reservoirs, Moscow)
(10): 1559 (feeding behavior, food consumption, USSR)
(10): 1571 (ecological associations, dominant species, Kličava Reservoir, Czechoslovakia)
(10): 1670 (population dynamics, yield, L. Constance, Germany)
(10): 1678 (exploitation, L. Balaton, Hungary)
(10): 1684 (population dynamics, catch statistics, pollution effects, Finland)
(10): 1710 (population dynamics, L. IJssel, other lakes, Netherlands)
(10): 1720 (yield, L. Mälaren, L. Hjälmaren, Sweden)
(10): 1734 (ecological associations, population density, Kličava Reservoir, Czechoslovakia)
(10): 1764 (exploitation, predation, Windermere, England)
(10): 1936 (habitat, rivers)

Perch, Pacific ocean (*Sebastes alutus*)
T 664 (marketing, frozen products)
690 (stock assessment, B.C., Wash., Ore.)

Perch, white (*Morone americana*)
J 34(7): 1039 (range, L. Erie)

Perch, yellow (*Perca flavescens*)
J 34(2): 239 (temperature preference)
(6): 850 (pollutants, organic compounds, Nipigon Bay, Ont.)
(7): 925 (predation, walleye, Oneida L., N.Y.)
(10): 1464 (biogeography, environmental factors, North America)
(10): 1504 (morphology, physiology, ecology)
(10): 1602 (biomass, yield, lakes, North America)
(10): 1633 (interspecific relationships, Wilson L., Minn.)
(10): 1655 (interspecific relationships, unexploited populations, West Blue L., Man.)
(10): 1748 (population dynamics, reservoirs, Missouri R., S.D.)
(10): 1774 (population dynamics, yield, Red Lakes, Minn.)
(10): 1784 (yield, long-term changes, Lake of the Woods, Ont.-Minn.)
(10): 1821 (population dynamics, L. Michigan)
(10): 1830 (population characteristics, exploitation, temperature effects, Saginaw Bay, Mich.)
(10): 1839 (yield, population biology, L. Huron)
(10): 1861 (population dynamics, interspecific relationships, L. Erie)
(10): 1869 (population dynamics, exploitation, L. St. Clair)
(10): 1922 (energy budget, mathematical models)
(10): 1936 (habitat, rivers)

Perches (*Perca* spp.)
J 34(10): 1475 (retina, histology, behavior)
(10): 1941 (interspecific relationships, aquatic communities)

Percidae
J 34(10) 1445-1999 (special issue, proceedings Percid International Symposium (PERCIS))
(10): 1450 (taxonomy, morphology, biogeography)
(10): 1524 (temperature requirements, adaptations)
(10): 1576 (exploitation, multispecies fisheries, pikeperch lakes, Poland)
(10): 1586 (environmental conditions, lakes, central Europe)
(10): 1613 (yield, community composition, lakes, Ont.)
(10): 1670 (L. Constance, Germany)
(10): 1678 (L. Balaton, Hungary)
(10): 1684 (Finland)
(10): 1710 (Netherlands)
(10): 1861 (population dynamics, L. Erie)
(10): 1869 (population dynamics, L. St. Clair)
(10): 1890 (morphology, reproduction, feeding behavior, migrations)
(10): 1900 (temperature effects, year-class strength, mathematical models)
(10): 1910 (reproductive guilds, ecological succession)
(10): 1952 (niche theory)
(10): 1959 (population characteristics, unperturbed ecosystems)
(10): 1964 (habitat, eutrophication)
(10): 1983 (behavior, exploitation)
(10): 1989 (production systems)

Percopsis omiscomaycus (*see* Trout-perch)

Periphyton
J 34(6): 856 (productivity, Nipigon Bay, Ont.)

Periwinkles (Gastropoda)
S 2295 (distribution, limiting factors, *Littorina sitkana, L. planaxis*)

Perspectives
J 34(5): 710 (fisheries, aquatic sciences, management, proposed research)
(5): 728 (temperature preference, environmental factors, fishes)

(7): 1046 (fishery sciences, resource needs, Canada)

Peru
J 34(12): 2344 (food chains, pelagic environment)

Pesticides
J 34(1): 89 (chlordane, bioaccumulation, lipids, northern redhorse sucker)
(1): 119 (DDT, dehydrochlorination, brook trout)
(5): 626 (methoxychlor, pollution monitoring, fishes, Athabasca R., Alta.)
(7): 937 (organochlorine residues, grey seals, Sable I., N.S)
S 2273 (methoxychlor, Chalk R., Ont.)
2321 (fenitrothion, toxicity, crayfish)
2323 (alkyldinitrophenols)
2363 (methoxychlor residues, analysis)
2369 (carbofuran)
2370 (DDT, metabolism, brook trout)
2376 (metabolism, aquatic animals)
T 692 (chlorinated pesticides, fishes, L. Huron)
693 (chlorinated pesticides, fishes, L. Superior)
714 (organophosphates, analysis)

Petroleum (*see* Pollutants; Pollution; Pollution effects)

Petromyzon marinus (*see* Lamprey, sea)

pH
J 34(2): 262 (eggs, larvae, survival, white sucker)
(4): 574 (eggs, fry, tolerance, brook trout)
(5): 649 (Lumsden L., Ont.)
(11): 2215 (spawning grounds, brook trout)

Phaffia rhodozyma (*see* Yeast, red)

Phalacrocorax auritus (*see* Cormorant, double-crested)

Phalaris arundinacea (*see* Canarygrass, reed)

Phenology
J 34(8): 1207 (kelp, Burrard Inlet, B.C.)

Phoca groenlandica (*see* Seal, harp)
hispida (*see* Seal, ringed)
vitulina (*see* Seal, harbor)

Phocanema decipiens (codworm) (*see* Nematoda)

Phocidae (*see* Seals)

Phosphorus; Phosphorus compounds
J 34(2): 286 (mathematical models, L. Ontario)
(5): 692 (fallout, Columbia L., Conn.)
(7): 918 (atmospheric precipitations, nutrient budgets)
(12): 2255 (lakes, primary production)
S 2277 (limiting factors, Experimental Lakes Area lakes, NW Ont.)

Photoperiodicity
J 34(3): 341 (rheotropism, common shiner)

Photosynthesis
S 2250 (light effects, phytoplankton, mathematical models)
2292 (marine diatoms)
2355 (light effects, phytoplankton, N.S.)
D 32 (phytoplankton, Experimental Lakes Area lakes, NW Ont.)

Phylogeny
B 197 (female genitalia, Chironomidae, Nematocera)

Physeter catadon (*see* Whale, sperm)

Physical oceanography
J 34(4): 516 (long-term changes, Cabot Strait, NW Atl.)
T 654 (mathematical models, phytoplankton dynamics, Howe Sound, B.C.)
685 (data, Eskimo Lakes, N.W.T.)

Physiology
J 34(2): 239 (temperature preference, fishes)
(5): 729-761 (temperature preference, environmental factors, fishes, perspective)
(9): 1293 (primary immune response, rainbow trout)
(10): 1504 (Eurasian perch, yellow perch)
(10): 1515 (walleye, pikeperch)
(11): 2164 (stress, salmonids)
S 2294 (diets, fatty acids, fats, monkeys)
T 705 (osmoregulation, smolts, Pacific salmons)
719 (diets, fatty acids, monkeys)

Phytoplankton (*see also* Primary production)
J 34(4): 537 (diatoms, silicon cycle, L. Michigan)
(4): 545 (diatom frustules, silicon cycle, L. Michigan)
(6): 856 (productivity, Nipigon Bay, Ont.)
(7): 907 (distribution, Howe Sound, B.C.)
(7): 1004 (population dynamics, nutrient cycles, Scotian Shelf)
(12): 2255 (production, phosphorus, limnology)
(12): 2271 (production, fish yield, limnology)
S 2250 (photosynthesis, light effects, mathematical models)
2268 (glucosamine, growth, marine microalgae)
2289 (production, budget, variations, coastal inlets)
2290 (variance spectrum, oceans)
2313 (standing stock, primary production, check lists, S Beaufort Sea)
2355 (photosynthesis, light effects, N.S.)
2357 (primary production, mathematical models)
2372 (marine environment, biological prediction, mathematical models)
T 658 (ecological succession, abundance, Howe Sound, B.C.)

708 (primary production, experimental data, Continental Shelf, N.S.)
D 32 (photosynthesis, Experimental Lakes Area lakes, NW Ont.)

Pickerel, chain (*Esox niger*)
J 34(12): 2338 (artificial hybrid)

Pickerel, grass (*Esox americanus vermiculatus*)
J 34(12): 2338 (artificial hybrid)

Pickerel, redfin (*Esox americanus americanus*)
J 34(12): 2338 (artificial hybrid)

Pigments
J 34(3): 413 (endosymbiont, alga)
(5): 659 (carotenoids, blue-green alga)
(12): 2417 (astaxanthin, diets, salmonids, crustaceans)

Pike, Amur (*Esox reicherti*)
J 34(12): 2338 (artificial hybrid)

Pike, blue (*Stizostedion vitreum glaucum*)
J 34(10): 1861 (population dynamics, interspecific relationships, L. Erie)

Pike, northern (*Esox lucius*)
J 34(10): 1592 (ecological associations, lakes, Ontario)
(10): 1720 (yield, L. Mälaren, L. Hjälmaren, Sweden)
(10): 1734 (ecological associations, Kličava Reservoir, Czechoslovakia)
(10): 1764 (predators, Windermere, England)
(12): 2338 (artificial hybrid)

Pikeperch (*Stizostedion lucioperca*)
J 34(10): 1515 (morphology, physiology, behavior)
(10): 1559 (feeding behavior, food consumption, USSR)
(10): 1576 (community composition, pikeperch lakes, Poland)
(10): 1581 (habitat, yield, Poland)
(10): 1670 (population dynamics, yield, L. Constance, Germany)
(10): 1678 (exploitation, interspecific relationships, L. Balaton, Hungary)
(10): 1684 (population dynamics, catch statistics, pollution effects, Finland)
(10): 1710 (population dynamics, L. IJssel, other lakes, Netherlands)
(10): 1720 (yield, L. Mälaren, L. Hjälmaren, Sweden)
(10): 1734 (ecological associations, population density, Kličava Reservoir, Czechoslovakia)
(10): 1936 (habitat, rivers)

Pikeperches (*Stizostedion* spp.)
J 34(10): 1475 (retina, histology, behavior)
(10): 1941 (interspecific relationships, aquatic communities)

Pikes (Esocidae)
J 34(12): 2338 (artificial hybrids)

Pimephales notatus (*see* Minnow, bluntnose)
promelas (*see* Minnow, fathead)

Pinfish (*Lagodon rhomboides*)
J 34(4): 568 (avoidance, pulpmill effluents)
(12): 2316 (juveniles, swimming speed)

Piscine erythrocytic necrosis (PEN) (*see* Viruses)

Pituitary glands
J 34(11): 2151 (gonadotropin, American plaice)
S 2298 (secretory cells, pars distalis, salinity effects, coho salmon)
2312 (gonadotropin, chinook salmon)

Placopecten magellanicus (*see* Scallop, sea)

Plaice, American (*Hippoglossoides platessoides*)
J 34(11): 2151 (gonadotropin, pituitary glands)
S 2258 (food, Grand Bank)

Plankton (*see also* Phytoplankton; Zooplankton)
J 34(12): 2308 (size composition, Gulf of St. Lawrence)
S 2285 (energy flow, mathematical models)
2306 (fatty acids, octadecapentaenoic acid)

Plankton collecting devices
J 34(4): 571 (fish larvae)
T 679 (nets, zooplankton)

Pleuroxus (*see* Cladocera)

Plumes(aquatic)
J 34(6): 776 (pulpmill effluents, chemical analysis, Nipigon Bay, Ont.)
(6): 784 (pulpmill effluents, caloric changes, Nipigon Bay, Ont.)
(6): 791 (pulpmill effluents, suspended matter, Nipigon Bay, Ont.)
(6): 798 (pulpmill effluents, organic compounds, Nipigon Bay, Ont.)
(6): 805 (pulpmill effluents, dispersion, statistical model, Nipigon Bay, Ont.)

Poacher, cutfin (*Xeneretmus leiops*)
S 2348 (new records, distribution, B.C.)

Poacher, pricklebreast (*Stellerina xyosterna*)
S 2348 (new records, distribution, B.C.)

Poacher, warty (*Occella verrucosa*)
S 2348 (distribution, B.C.)

Poachers (Agonidae)
S 2348 (new records, distribution, identification keys, B.C.)

Podon (*see* Cladocera)

Poisons(biological)
J 34(4): 559 (saxitoxin, detection, measurement, *Gonyaulax*)
(12): 2421 (mortality causes, *Gonyaulax*, Atlantic herring, Bay of Fundy)

S 2260 (venoms, proteins, *Crotalus adamanteus*)

Poland
J 34(10): 1576 (multispecies fisheries, community composition, pikeperch lakes)
(10): 1581 (habitat, yield, pikeperch)

Pollachius virens (*see* Pollock)

Pollock (*Pollachius virens*)
S 2325 (stock assessment, ICNAF Divisions 4VWX + Subarea 5)

Pollutants; Pollution; Pollution effects
J 34(2): 215 (chlorinated wastewater, coho salmon, controlled conditions)
(2): 254 (oil contamination, *Cricotopus*, Fort Simpson area, N.W.T.)
(2): 276 (lampricide, aquatic communities, model studies)
(4): 477 (pulpmill effluents, toxicity, bioassays, salmonids)
(4): 493 (mercury, aquatic communities, controlled conditions)
(4): 568 (pulpmill effluents, avoidance, estuarine fishes)
(5): 649 (fallout, sulfur compounds, heavy metals, Lumsden L., Ont.)
(6) 771-885 (special issue, pulpmill effluents, freshwater environment)
(6): 771 (pulpmill effluents, environmental surveys, Nipigon Bay, Ont.)
(6): 776 (pulpmill effluents, chemical analysis, Nipigon Bay, Ont.)
(6): 784 (pulpmill effluent plumes, caloric changes, Nipigon Bay, Ont.)
(6): 791 (pulpmill effluent plumes, suspended matter, Nipigon Bay, Ont.)
(6): 798 (pulpmill effluent plumes, organic compounds, Nipigon Bay, Ont.)
(6): 805 (pulpmill effluent plumes, chemistry, Nipigon Bay, Ont.)
(6): 817 (pulpmill effluents, bottom sediments, western Nipigon Bay, Ont.)
(6): 824 (pulpmill effluents, macroinvertebrates, ecological zonation, Nipigon Bay, Ont.)
(6): 830 (pulpmill effluents, organic compounds, distribution, Nipigon Bay, Ont.)
(6): 838 (pulpmill effluents, dehydroabietic acid, sediments, Nipigon Bay, Ont.)
(6): 844 (pulpmill effluents, bacteria, Nipigon Bay, Ont.
(6): 850 (pulpmill effluents, organic compounds, fishes, Nipigon Bay, Ont.)
(6): 856 (pulpmill effluents, productivity, phytoplankton, periphyton, Nipigon Bay, Ont.)
(6): 863 (pulpmill effluents, pollution effects, filtering rate, *Daphnia*)
(6): 869 (pulpmill effluents, bioassays, rainbow trout)
(6): 879 (pulpmill effluents, behavior, fishes, Nipigon Bay, Ont.)
(7): 899 (atmospheric fallout, heavy metals, Flin Flon, Man.)
(7): 907 (turbidity, surface layers, Howe Sound, B.C.)
(8): 1143 (bioaccumulation, petroleum, hydrocarbons, ringed seal)
(9): 1389 (pulpmill effluents, toxicity, sealed-jar bioassays)
(10): 1684 (toxicants, heavy metals, Percidae, Finland)
(11): 2079 (acidification, La Cloche Mountain lakes, Ont.)
S 2299 (petroleum, locomotion, *Onisimus*, *Halitholus*)
2315 (acid precipitations, lakes, fishes, Canada)
2334 (sediment pollution, crustaceans)
2371 (organochlorine compounds, aquatic organisms)
T 652 (toxicity, pulpmill effluents, salmonids, Crofton, B.C.)
656 (pulpmill effluents, *Anisogammarus confervicolus*, *Gammarus setosus*)
662 (ocean dumping, heart cockle, Dungeness crab, controlled conditions)
663 (industrial wastes, invertebrates, Howe Sound, B.C.)
692 (PCB, chlorinated insecticides, heavy metals, fishes, L. Huron)
693 (PCB, chlorinated insecticides, heavy metals, fishes, L. Superior)
714 (organophosphate pesticides, analysis)
718 (pulpmill effluents, sublittoral benthos)
729 (hydrocarbons, sediments, marine organisms, W Greenland)
A 345 (sulfur compounds, lakes, fishes, Canada)

Pollution monitoring
J 34(3): 436 (trace contaminants, ecosystems)
(5): 626 (methoxychlor, fishes, Athabasca R., Alta.)
(11): 2164 (pulpmill effluents, stress, salmonids, analytical techniques)
S 2266 (chlorinated hydrocarbons, eggs, double-crested cormorant, Bay of Fundy)
2300 (pulpmill effluents, water mixing, estuaries)
2353 (petroleum, mixed function oxidases, marine organisms)
T 666 (pulpmill effluents, surface water, Stuart Channel, B.C.)
669 (copper, seawater)
CNG 105 (mercury, seawater, fresh water, B.C.)
106 (computer programs, data storage, data retrieval, B.C.)

Pollution surveys
T 691 (Red Indian L., Nfld.)

Polychaeta
J 34(4): 563 (detritus feeders, meiofaunal effect, *Nephthys incisa*)

Polychlorinated biphenyls
S 2326 (bioaccumulation, Atlantic salmon)

T 692 (pollutants, fishes, L. Huron)
693 (pollutants, fishes, L. Superior)

Ponds
S 2275 (ocean pond, primary production, secondary production, Alberni Inlet, Vancouver I., B.C.)

Pontella (*see* Calanoida)

Pontoporeia (*see* Amphipoda)

Population characteristics
J 34(10): 1959 (unperturbed ecosystems, Percidae)

Population control
J 34(10): 1633 (white sucker, Wilson L., Minn.)

Population density
S 2338 (energy budget, *Balanus glandula*)

Population dynamics
J 34(2): 183 (aquatic mammals, mathematical models)
(3): 425 (growth curves, mathematical models)
(7): 942 (lake whitefish, Lesser Slave L., Alta.)
(7): 1004 (plankton, Scotian Shelf)
(8): 1196 (statistical analysis, *Calanus*, Strait of Georgia, B.C.)
(10): 1670 (Eurasian perch, L. Constance, Germany)
(10): 1684 (pikeperch, Eurasian perch, ruffe, Finland)
(10): 1696 (walleye, Rainy L., Ont.-Minn.)
(10): 1710 (pikeperch, Eurasian perch, ruffe, L. IJssel, other lakes, Netherlands)
(10): 1774 (walleye, yellow perch, Red Lakes, Minn.)
(10): 1792 (walleye, Clear L., Iowa)
(10): 1800 (walleye, Escanaba L., Wis.)
(10): 1812 (walleye, Oneida L., N.Y.)
(10): 1821 (yellow perch, L. Michigan)
(10): 1861 (sauger, blue pike, walleye, yellow perch, L. Erie)
(10): 1869 (walleye, yellow perch, L. St. Clair)
(10): 1878 (walleye, Great Lakes)
(10): 1972 (mathematical models, walleye, L. Erie)
(11): 2041 (crayfish, Michigan lakes)
(11): 2124 (mathematical models, fishes)
(12): 2295 (mercury, zooplankton, simulation)
T 654 (phytoplankton dynamics, Howe Sound, B.C.)
691 (fishes, Red Indian L., Nfld.)
698 (Cladocera, St. Margaret's Bay, N.S.)
704 (grey seal, eastern Canada)

Population functions
J 34(1): 142 (smallmouth bass, L. Simcoe, Ont.)
(10): 1839 (walleye, yellow perch, L. Huron)

Population genetics
J 34(1): 105 (*Anisakis simplex*, N Atl.)
(8): 1220 (rainbow smelt)

Population structure
J 34(2): 232 (bottom trawling, Cichlidae, L. Malawi, Africa)
(10): 1655 (walleye, yellow perch, West Blue L., Man.)
(10): 1900 (year-class strength, mathematical models, Percidae)

Power plants
J 34(5): 746 (environmental effects, fishes)
(12): 2316 (impingement, fishes)

Prawn, spot (*Pandalus platyceros*)
J 34(11): 2199 (tagging)

Precipitations(atmospheric)
J 34(7): 918 (nutrient budgets, phosphorus, lakes)
S 2315 (acid precipitations, lakes, Canada)
A 345 (sulfur compounds, lakes, Canada)

Predation; Predators
J 34(1): 73 (mathematical models, interspecific relationships, zooplankton)
(5): 703 (nauplii, zooplankton, Bluff L., N.S.)
(7): 925 (walleye, yellow perch, Oneida L., N.Y.
(8): 1126 (polar bear, seals, Canadian Arctic)
(10): 1764 (Eurasian perch, Windermere, England)
(11): 2203 (American lobster, sea urchins, crabs)
S 2271 (ringed seal pups, arctic fox, Victoria I., N.W.T.)

Primary production (*see also* Phytoplankton)
J 34(4): 552 (silicon cycle, diatoms, L. Michigan)
(8): 1240 (carbon budget, L. Ontario)
S 2275 (ocean pond, Alberni Inlet, Vancouver I., B.C.)
2316 (Experimental Lakes Area lakes, NW Ont.)
T 654 (mathematical models, Howe Sound, B.C.)
685 (Eskimo Lakes, N.W.T.)
D 27 (biological data 1975, Great Central Lake, Vancouver I., B.C.)
30 (biological data 1976, Great Central Lake, Vancouver I., B.C.)
38 (biological data, Ocean Weather Station 'P', Pac. Ocean)

Processing fishery products
J 34(3): 420 (frozen products, chemical additives, suckers)
(9): 1431 (freezing, thaw drip, Pacific salmons)
(12): 2369 (storage, refreezing, silver hake)
S 2255 (freezing storage, quality control, Atlantic mackerel)

2264 (frozen products, thawing, mullet)
2380 (purification, Pacific oysters)
T 670 (equipment, Pacific herring roe)
673 (canned products, ocean clam)
682 (Pacific salmon roe)
720 (literature reviews, ocean clam, NW Atl.)
727 (quality control, canned products, Pacific herring)
CHN 59 (minced products, quality control)
60 (Atlantic herring roe, Canada)

Production(biological) (*see also* Primary production; Secondary production)
J 34(3): 443 (*Thysanöessa raschii*, Gulf of St. Lawrence)
(10): 1989 (production systems, Percidae)
(11): 2041 (crayfish, Michigan lakes)
S 2252 (river fisheries, crayfish, W. Ore.)
2302 (limiting factors, coho salmon)
T 678 (sockeye salmon, Great Central L., Vancouver I., B.C.)
A 350 (phytoplankton, zooplankton, St. Margaret's Bay, inlets, N.S.)

Proteins
J 34(1): 83 (ontogenesis, rainbow trout)
(8): 1236 (hybrids, electrophoresis, rainbow trout, cutthroat trout)
S 2260 (glycoprotein, venom, *Crotalus adamenteus*)
2276 (myoglobins, Salmonidae)

Pseudoanabaena catenata (*see* Alga, blue-green)

Pseudocalanus (*see* Calanoida)

Pseudochironomus (*see* Chironomidae)

Pseudopleuronectes americanus (*see* Flounder, winter)

Pteropod
J 34(12): 2421 (*Limacina*, vector, Bay of Fundy)

Public health
J 34(7): 887 (infections, codworm)
A 348 (bacterial diseases, "seal finger")

Pulpmill effluents (*see* Pollutants; Pollution; Pollution effects)

Pumpkinseed (*Lepomis gibbosus*)
J 34(3): 332 (otoliths, daily rings, controlled conditions)

Q

Quebec (Province), Canada (*see* Matamek R. system; Memphremagog, L., Saguenay fjord; St. Lawrence, Gulf of; St. Lawrence R.)

Quinte, Bay of, Lake Ontario
J 34(10): 1849 (long-term changes, ecological associations, community composition, fishes)

R

Radioactivity
T 692 (fishes, L. Huron)
693 (fishes, L. Superior)

Rainy Lake, Ont.-Minn., America
J 34(10): 1696 (population dynamics, walleye)

Records, new (*see* New records)

Recruitment
J 34(3): 425 (stock-recruitment curves, mathematical models)
(11): 2124 (stock recruitment, mortality, mathematical models)

Red Indian Lake, Nfld.
T 691 (environmental surveys, limnology, lake fisheries)

Red tides
J 34(3): 413 (*Mesodinium rubrum*, Passamaquoddy Bay, N.B.)

Redfish (*Sebastes marinus/S. mentella*) (ocean perch)
S 2256 (stock assessment, potential yield, northern Nfld.-Labrador, Flemish Cap)

Reports
AR 1976 (Annual Report, Fisheries Research Board of Canada)
S 2301 (Progress report, Whaling Commission)
2352 (International Whaling Commission)
2360 (Ageing Workshop, Atlantic cod)
T 689 (Substrate Incubators Workshop 1976)
707 (Annual report, Diagnostic Service Fisheries and Marine Service, Pacific Region 1975.
M 1427 (research reports, Pacific herring)

Reproduction(biology)
J 34(9): 1286 (spiny dogfish, Strait of Georgia, B.C.)
(9): 1419 (lake trout, Gamitagama L., Ont.)
(10): 1890 (Percidae)
(12): 2308 (spawning, egg size, Atlantic mackerel, Gulf of St. Lawrence)
(12): 2362 (blue hake, western N Atl.)
S 2279 (harbor seal, Vancouver I., B.C.)
2280 (shellfish culture, American lobster)

Reproductive behavior
J 34(10): 1481 (light effects, walleye)
(10): 1515 (walleye, pikeperch)
(10): 1910 (reproductive guilds, ecological succession, Percidae)
A 344 (ringed seal, Victoria I., N.W.T.)

Reproductive organs
J 34(11): 2104 (biochemical composition, seasonal variations, sea scallop, Nfld.)
B 197 (female genitalia, morphology, taxonomy, Chironomidae, Nematocera)

Research vessels
MSP 34 (monitoring, sea ice, Gulf of St. Lawrence, Skylab)

Reservoirs(water)
J 34(5): 669 (eutrophic reservoirs, sedimentation, Long L., Wash.)
(10): 1551 (development, food, Eurasian perch, Moscow)
(10): 1571 (dominant species, Eurasian perch, roach, Kličava Reservoir, Czechoslovakia)
(10): 1734 (community composition, ecological associations, Kličava Reservoir, Czechoslovakia)
(10): 1748 (population dynamics, yellow perch, sauger, walleye, Missouri R., S.D.)
T 691 (limnology, lake fisheries, Red Indian L., Nfld.)

Resource availability
A 346 (biological resources, Beaufort Sea area)

Resource management
CNG 104 (watersheds, Carnation Creek, Vancouver I., B.C.)

Respiration
J 34(2): 225 (surface area, *Thysanoëssa raschii*)
S 2283 (zooplankton, Bedford Basin, N.S.)

Rheotropism
J 34(3): 341 (temperature regulation, photoperiod regulation, common shiner)

Roach (*Rutilus rutilus*)
J 34(10): 1571 (ecological associations, dominant species, Kličava Reservoir, Czechoslovakia)

Rockfish, canary (*Sebastes pinniger*)
T 664 (marketing, frozen products)

Rockfish, redbanded (*Sebastes babcocki*)
T 664 (marketing frozen products)

Rockfish, silvergray (*Sebastes brevispinis*)
T 664 (marketing frozen products)

Rockfish, widow (*Sebastes entomelas*)
T 664 (marketing, frozen products)

Rockfishes (Scorpaenidae)
T 659 (selected bibliographies, *Sebastes*, *Sebastolobus*)
664 (marketing, frozen products)

Roe (*see* Fish eggs)

Ruffe (*Gymnocephalus cernua*) (ruff)
J 34(10): 1492 (sense organs, lateral line, ontogeny)
(10): 1678 (exploitation, interspecific relationships, L. Balaton, Hungary)
(10): 1684 (population dynamics, pollution effects, Finland)
(10): 1710 (population dynamics, L. IJssel, other lakes, Netherlands)

Rutilus rutilus (*see* Roach)

S

Sable Island, N.S.
J 34(7): 937 (organochlorine, grey seals)
(11): 2196 (mass stranding, long-finned pilot whale)

Saetheria (*see* Chironomidae)

Sagebrush (*Artemisia tridentata*)
S 2311 (terpenes)
2333 (ethers)

Saguenay fjord, St. Lawrence River, Que.
S 2291 (sediments, cobalt, nickel, chromium, vanadium)

Saint John River Estuary, N.B.
T 686 (hydrography, chemical properties)

Salinity
S 2374 (distribution, Suez Canal, Egypt)

Salinity effects
J 34(1): 151 (swimming speeds, coho salmon)
S 2298 (secretory cells, pars distalis, coho salmon)

Salinity tolerance
J 34(3): 384 (genetics, larvae, American oyster)
T 656 (*Anisogammarus confervicolus*, *Gammarus setosus*)

Salmincola (*see* Lernaeopodidae)

Salmo clarki (*see* Trout, cutthroat)
gairdneri (*see* Trout, rainbow; Trout, steelhead)
gilae (*see* Trout, gila)
salar (*see* Salmon, Atlantic)
trutta (*see* Trout, brown)

Salmon (Pacific in general) (*Oncorhynchus* spp.)
J 34(1): 49 (utility function, fishery management, fishery policy, Skeena R., B.C.)
(1): 64 (goals, fishery management, Skeena R., B.C.)
(9): 1431 (freezing, thaw drip)
S 2276 (myoglobins, electrophoresis)
T 665 (experimental fish-farming 1975)
682 (processing fishery products, roe)
689 (substrate incubators, reports)
705 (osmoregulation, smolts)
707 (annual report, diseases, B.C.)
726 (experimental fish-farming 1976)
D 39 (catch statistics, escapement, B.C.)
A 343 (fishery management)

Salmon, Atlantic (*Salmo salar*)
J 34(1): 31 (development, eggs, alevins, temperature effects)
(1): 105 (*Anisakis simplex*, N Atl.)
(1): 139 (zinc, lethal limits, variations, juveniles)
(11): 2185 (pseudobranch, vision)
(12): 2388 (specific gravity, alevins)
S 2322 (bioaccumulation, halogenated hydrocarbons)
2323 (alkyldinitrophenols, toxicity)
2324 (bioaccumulation, polybrominated biphenyls)
2326 (bioaccumulation, polychlorinated biphenyls)
T 668 (age composition, growth, sexual maturity, feeding behavior, Soldiers Pond, Nfld.)
671 (lacustrine nursery areas, Salmon Pond, Nfld.)
684 (catch statistics, commercial fishing, Nfld.-Labrador)
697 (biological data, North Harbour R., Nfld.)
D 26 (game fish, feeding behavior, Avalon Peninsula, Nfld.)

Salmon, chinook (*Oncorhynchus tshawytscha*)
J 34(2): 203 (immunization, methodology)
(3): 325 (vector, new records, *Echinorhynchus salmonis*, L. Michigan)
(7): 933 (parasitism, ceratomyxosis)
S 2312 (gonadotropins, pituitary glands)

Salmon, chum (*Oncorhynchus keta*)
S 2336 (food webs, detritus)
T 660 (bioaccumulation, copper, controlled ecosystem experiment)

Salmon, coho (*Oncorhynchus kisutch*)
J 34(1): 1 (bacterial kidney disease, hematology)
(1): 151 (swimming speeds, salinity effects, temperature effects)
(2): 203 (immunization, methodology)
(2): 215 (chlorinated wastewater, pollution effects, controlled conditions)
(4): 477 (bioassays, toxicity, pulpmill effluents)
(4): 486 (nitrite toxicity, chloride effects)
(7): 1026 (immunization, vibriosis)
(9): 1389 (bioassays, toxicity, pulpmill effluents)
S 2274 (steroids, growth regulators)
2298 (salinity effects, secretory cells, pars distalis)
2302 (supplemental feeding, Sandy Creek, Vancouver I., B.C.)
2344 (distribution, abundance, catch statistics, N Pac.)
T 652 (pulpmill effluents, pollution effects, Crofton, B.C.)
666 (avoidance, pulpmill effluents, Stuart Channel, B.C.)
677 (fertility, males, cage culture)
715 (scale characteristics, Vancouver I., B.C.)
716 (hormones, growth regulators)
M 1428 (interspecific relationships, sympatric populations, summer, simulation)
1429 (interspecific relationships, sympatric populations, winter, spring, simulation)

Salmon, pink (*Oncorhynchus gorbuscha*)
T 697 (stocking, North Harbour R., Nfld.)
702 (statistical analysis, wet weight, dry weight)
716 (hormones, growth regulators)

Salmon, sockeye (*Oncorhynchus nerka*)
J 34(2): 191 (ectoparasites, *Salmincola californiensis*)
(5): 706 (parasitism, toxicity, zinc)
(9): 1379 (dispersion, fry, simulation, Babine L., B.C.)
S 2259 (interspecific competition, feeding behavior, Great Central L., Vancouver I., B.C.)
T 675 (metabolism, feeding)
678 (habitat improvement, Great Central L., Vancouver I., B.C.)

Salmonidae
J 34(2): 239 (temperature preference)
(3): 325 (parasitism, *Echinorhynchus salmonis*, L. Michigan)
(5): 683 (ascorbic acid, diets, trouts)
(7): 933 (parasitism, ceratomyxosis)
(8): 1130 (exploitation, stability regions)
(11): 2133 (aquaculture, rearing channels)
(11): 2164 (pollution monitoring, stress, analytical techniques)
(12): 2417 (diets, pigments, red yeast)
S 2276 (myoglobins, electrophoresis)
2350 (olfaction, phospholipids, histochemistry)
MSP 31 (manuals, Fish Health Protection Regulations, Canada)
T 652 (pulpmill effluents, pollution effects, Crofton, B.C.)

Salvelinus alpinus (*see* Char, Arctic)
fontinalis (*see* Trout, brook)
namaycush (*see* Trout, lake)

Samplers
J 34(4): 571 (fish larvae)
(7): 1031 (benthos collecting device)
(8): 1230 (zooplankton)
S 2254 (aquatic invertebrates)

Sampling(biological)
J 34(1): 164 (metabolic measurements, copepods)
S 2254 (aquatic invertebrates, Lymn Creek, B.C.)
D 28 (water sampling, Rupert Inlet, Holbert Inlet, Quatsino Sound, B.C.)

Satellites
MSP 34 (monitoring, sea ice, Gulf of St. Lawrence, Skylab)

Sauger (*Stizostedion canadense*)
J 34(10): 1467 (retina, behavior)
(10): 1643 (food consumption, lakes, Minn.)
(10): 1748 (population dynamics, reservoirs, Missouri R., S.D.)
(10): 1784 (yield, long-term changes, Lake of the Woods, Ont.-Minn.)
(10): 1861 (population dynamics, interspecific relationships, L. Erie)

Saxifragaceae
S 2377 (flavonoids, *Chrysosplenium tetrandrum*)

Saxitoxin (*see* Poisons(biological))

Scales
J 34(9): 1305 (aging methods, lingcod)
T 715 (scale characteristics, coho salmon, Vancouver I., B.C.)

Scallop, sea (*Placopecten magellanicus*) (giant scallop)
J 34(11): 2104 (blood, biochemical composition, reproductive organs, Nfld.)

Scenedesmus quadricauda (*see* Alga, green)

Schist Lake, Man.
T 674 (bathymetry, morphometry)

Scientific personnel
MSP 33 (marine sciences, directories, Canada)

Scomber scombrus (*see* Mackerel, Atlantic)

Scorpaenichthys marmoratus (*see* Cabezon)

Scotian Shelf (off N.S.)
J 34(7): 1004 (plankton dynamics, nutrient cycles)
S 2278 (catch statistics, catch/effort, potential yield, groundfish)
2286 (stock assessment, potential yield, Atlantic cod)
2341 (age composition, catch statistics, silver hake)
T 722 (distribution, whales)

Sculpin, slimy (*Cottus cognatus*)
J 34(3): 325 (vector, new records, *Echinorhynchus salmonis*, L. Michigan)
(3): 392 (biogeography, Peel River basin, Y.T.)

Sea cucumber (*Cucumaria frondosa*)
S 2251 (feeding behavior, tentacles)

Sea ice
MSP 34 (monitoring, Gulf of St. Lawrence, Skylab)

Seal, bearded (*Erignathus barbatus*)
J 34(7): 976 (distribution, abundance, interspecific relationships, Beaufort Sea)
(8): 1126 (predation, polar bear, Canadian arctic)
T 667 (distribution, migrations, Central Arctic Region)
680 (migrations, census, Cape Hay, Bylot I., N.W.T.)
694 (catch statistics, N.W.T.)

Seal, grey (*Halichoerus grypus*) (gray seal)
J 34(7): 937 (organochlorine residues)
S 2249 (steroids, blood)
T 704 (geographical distribution, population dynamics, vectors, eastern Canada)

Seal, harbor (*Phoca vitulina*)
S 2279 (reproductive cycle, Vancouver I., B.C.)
T 694 (catch statistics, N.W.T.)

Seal, harp (*Pagophilus groenlandicus*) (*Phoca groenlandica*)
J 34(8): 1155 (stock assessment, mathematical models)
T 680 (migrations, census, Cape Hay, Bylot I., N.W.T.)
694 (catch statistics, N.W.T.)
A 347 (life history, exploitation, stock assessment, N Atl.)

Seal, hooded (*Crystophora cristata*)
T 680 (migrations, census, Cape Hay, Bylot I., N.W.T.)
694 (catch statistics, N.W.T.)
A 347 (life history, stock assessment, N Atl.)

Seal, ringed (*Phoca hispida*)
J 34(7): 976 (distribution, abundance, interspecific relationships, Beaufort Sea)
(8): 1126 (predation, polar bear, Canadian arctic)
(8): 1143 (petroleum, hydrocarbons, bioaccumulation)
S 2271 (pups, predation, arctic fox, Victoria I., N.W.T.)
2272 (population number, catch statistics, James Bay, Hudson Bay)
T 667 (distribution, migrations, Central Arctic Region)
680 (migrations, census, Cape Hay, Bylot I., N.W.T.)
694 (catch statistics, N.W.T.)
A 344 (life history, reproductive behavior, Victoria I., N.W.T.)
346 (resource availability, Beaufort Sea area)

Seals (Phocidae)
S 2362 (diets, docosenoic acids)
T 724 (pathology, heart, docosenoic acids)
A 348 (bacterial diseases, "seal finger")

Seaweeds
J 34(8): 1207 (kelp, phenology, environmental effects, Burrard Inlet, B.C.)

Sebastes alutus (*see* Perch, Pacific ocean)
babcocki (*see* Rockfish, redbanded)
brevispinis (*see* Rockfish, silvergray)
entomelas (*see* Rockfish, widow)
marinus (*see* Redfish)
mentella (*see* Redfish)
paucispinis (*see* Bocaccio)
pinniger (*see* Rockfish, canary)
spp. (*see* Rockfishes)

Sebastolobus spp. (*see* Rockfishes)

Secondary production
J 34(9): 1410 (carbon cycle, Findley L., Wash.)
S 2275 (ocean pond, Alberni Inlet, Vancouver I., B.C.)
D 27 (biological data 1975, Great Central L., Vancouver I., B.C.)
30 (biological data 1976, Great Central L., Vancouver I., B.C.)

Sedimentation
J 34(5): 669 (eutrophic reservoir, Long L., Wash.)
S 2379 (organic suspended matter, aquatic communities)
T 721 (chlorophyll, carbon, nitrogen, St. Georges Bay, N.S.)

Sediments; Sediment analysis
J 34(6): 817 (bottom sediments, western Nipigon Bay, Ont.)
(6): 836 (dehydroabietic acid, Nipigon Bay, Ont.)
S 2291 (cobalt, nickel, chromium, vanadium, Saguenay fjord, Que.)
2293 (degradation, excretory products, invertebrates)
2319 (composition, reactivity, Mackenzie River Valley, N.W.T.)
2382 (stratigraphy, Tanzania)
2383 (nutrients, eutrophic lakes, Experimental Lakes Area lakes, NW Ont.)
2384 (chemical elements, Relative Atomic Variation, L. Winnipeg, Man.)
T 700 (manuals, analytical techniques)
729 (hydrocarbons, W Greenland)

Seismology
B 198 (tsumanis, world oceans)

Sense organs
J 34(10): 1492 (lateral line, ontogeny, Eurasian perch, ruffe)

Sensors
MSP 34 (monitoring, sea ice, lake ice, Gulf of St. Lawrence, Thousand Islands-St. Lawrence R., Skylab)

Sex ratio
J 34(2): 294 (American eel, Matamek R., Que.)
(10): 1571 (dominant species, roach, Eurasian perch, Kličava Reservoir, Czechoslovakia)
S 2364 (biased sex ratios, invertebrates)

Sexual maturity
J 34(11): 2151 (hormone injection, winter flounder)
T 668 (Atlantic salmon, Soldiers Pond, Nfld.)
677 (cage culture, fertility, coho salmon)
683 (lake chub, Mile 66 Brook, Ten Mile L., W Labrador)

Shad, American (*Alosa sapidissima*)
J 34(9): 1422 (ocean migration rates, Atl. coast)

Shad, gizzard (*Dorosoma cepedianum*)
J 34(2): 269 (feeding behavior, food conversion, Acton L., Ohio)

Shellfish
J 34(4): 559 (paralytic shellfish poison, saxitoxin, detection, measurement)

Shellfish fisheries
S 2263 (crabs, fishery management, fishery regulations, North America)
2380 (purification, Pacific oyster)

Shiner, common (*Notropis cornutus*)
J 34(3): 341 (rheotropism, temperature regulation, photoperiod regulation)

Shiner, golden (*Notemigonus crysoleucas*)
J 34(8): 1105 (distribution, food availability, L. Memphremagog, Que.-Vt.)
(9): 1397 (larvae, identification)

Shiner, mimic (*Notropis volucellus*)
J 34(8): 1105 (distribution, food availability, L. Memphremagog, Que.-Vt.)

Shiner, rosyface (*Notropis rubellus*)
J 34(9): 1365 (avoidance, hypochlorous acid)

Shiner, spotfin (*Notropis spilopterus*)
J 34(2): 239 (temperature preference)
(9): 1397 (larvae, identification)

Shiner, telescope (*Notropis telescopus*)
J 34(2): 239 (temperature preference)

Shrimp, northern pink (*Pandalus borealis*)
T 701 (experimental fishing, midwater trawls, Gulf of St. Lawrence)

Shrimp, smooth pink (*Pandalus jordani*)
D 37 (fishery surveys, Vancouver I., B.C.)

Silicon cycle
J 34(4): 537 (phytoplankton, diatoms, L. Michigan)
(4): 545 (diatom frustules, L. Michigan)
(4): 552 (primary production, diatoms, L. Michigan)

Simcoe, Lake, Ont.
J 34(1): 142 (population functions, population structure, potamodromous migrations, smallmouth bass)

Simulation
J34(4): 529 (temperature shocks, thermal plumes, aquatic insects)
(9): 1379 (dispersion, fry, sockeye salmon, Babine L., B.C.)
(12): 2295 (mercury, population dynamics, zooplankton)
(12): 2374 (fishery systems)
M 1428 (interspecific relationships, sympatric populations, summer, coho salmon, cutthroat trout)
1429 (interspecific relationships, sympatric populations, winter, spring, coho salmon, cutthroat trout)

Simuliidae (Diptera)
S 2273 (methoxychlor, Chalk R., Ont.)

Skeena River, B.C.
J 34(1): 49 (utility function, fishery management, fishery policy, Pacific salmons)
(1): 64 (goals, fishery management, Pacific salmons)

Smelt, rainbow (*Osmerus mordax*)
J 34(3): 325 (parasitism, *Echinorhynchus salmonis*, L. Michigan)
(8): 1220 (population genetics, taxonomy)
(8): 1242 (thyroid activity, Great Lakes)
S 2304 (fatty acids, Jeddore Harbour, N.S.)
2305 (fatty acids, Jeddore Harbour, N.S.)

Soldiers Pond, Nfld.
T 668 (age composition, sexual maturity, feeding behavior, Atlantic salmon)

Sole, Dover (*Microstomus pacificus*)
CNG 107 (exploratory fishing, NW B.C.)

Sole, flathead (*Hippoglossoides* spp.)
J 34(4): 455 (morphology, taxonomy, N Pac.)

Sole, yellowfin (*Limanda aspera*)
J 34(5): 611 (lymphocystis disease, Bering Sea)

Sonic tags
J 34(9): 1261 (underwater biotelemetry)

Sound production
J 34(9): 1436 (humpback whale, Notre Dame Bay, Nfld.)

South Dakota State, USA (*see* Missouri River)

Spawning behavior
J 34(11): 2215 (pH, spawning grounds, brook trout)
(12): 2308 (Atlantic mackerel, Gulf of St. Lawrence)

Spawning grounds
J 34(11): 2215 (pH, brook trout)
CNG 103 (mapping, Pacific cod, Ucluelet, B.C.)

Spawning seasons
J 34(12): 2308 (Atlantic mackerel, Gulf of St. Lawrence)

Speciation
J 34(3): 371 (dwarf white sucker)
(7): 1041 (karyotypes, gila trout)

Species, new (*see* New species)

Specific gravity
J 34(12): 2388 (alevins, Atlantic salmon)

Spectroscopic techniques
J 34(1): 44 (aging methods, spiny dogfish, Strait of Georgia, B.C.)
(3): 347 (oil detection, NW Atl.)
S 2281 (infrared spectrometry, wax esters, lubricating oil)
2331 (atomic absorption spectroscopy, lead alkyls, fish tissues)
2356 (analysis, chemical elements, suspended matter)
T 669 (analysis, copper, seawater)
699 (aging methods, spiny dogfish, Strait of Georgia, B.C.)

Sport fishing statistics
J 34(10): 1703 (walleye, L. Nipissing, Ont.)

Spot (*Leiostomus xanthurus*)
J 34(12): 2316 (juveniles, swimming speed)

Squalus acanthias (*see* Dogfish, spiny)

Squamish River delta, B.C.
S 2328 (river diversion, environmental effects, benthos)

St. Clair, Lake, America
J 34(10): 1869 (population dynamics, exploitation, walleye, yellow perch)

St. Georges Bay, N.S.
T 721 (chlorophyll, carbon, nitrogen, sedimentation)

St. Lawrence, Gulf of (*see also* Magdalen Islands)
J 34(3): 443 (production, *Thysanöessa raschii*)
(11): 2008 (aging methods, otoliths, capelin)
(11): 2015 (ecology, larvae, capelin)
(11): 2030 (ecology, juveniles, adults, capelin)
(12): 2308 (egg size, spawning seasons, plankton, Atlantic mackerel)
MSP 34 (monitoring, sea ice, Skylab)
T 701 (experimental fishing, midwater trawls, northern pink shrimp)

St. Lawrence River Estuary
J 34(11): 2117 (nutrients, distribution)

St. Marqaret's Bay, N.S.
S 2337 (community composition, seasonal variations, benthos)
T 698 (population ecology, Cladocera)

A 350 (water circulation, marine productivity)

Standardization
T 676 (refrigerated seawater system)

Starfish, purple (*Asterias vulgaris*) (northern starfish)
S 2359 (steroids, saponin, quantification)
2381 (steroids, saponin, abundance, Atl. coast, N.S.)

Statistical analysis
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Abbreviation: AR

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Rapport annuel. 1976. Office des recherches sur les pecheries du Canada. 16 p. (10)

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Abbreviation: MSP

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STUDIES/ÉTUDES

Abbreviation: S

(NOTE: Until 1970, reprints of these articles had been included in an annual volume of "Studies," composed of two parts. The final binding was the 1969 Studies, Part 2, which included No. 1355. These are no longer bound and distributed. We continue, however, to number and list all articles, which henceforth may be obtained in reprint form only from the author or originating establishment, indicated by the numeral at the end of each reference. See pages 2444-2445 for addresses corresponding to these numerals.)

(REMARQUE: Jusqu'en 1970, ces articles ont été réimprimés dans un volume annuel de Studies, composé de deux parties. La dernière parution a été dans le Studies de 1969, partie 2, qui comprenait le numéro 1355. Elles ne sont toutefois plus reliées ni distribuées. Nous continuons, cependant, à numéroter et à énumérer tous les articles qu'on peut obtenir seulement de l'auteur ou l'établissement de provenance qui est indiqué par le numéro à la fin de chaque référence. Voir aux pages 2444-2445 les adresses correspondant à ces numéros.)

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718. Wildish, D. J., N. J. Poole, and D. D. Kristmanson. 1977. Temporal changes of sublittoral macrofauna in L'Etang Inlet caused by sulfite pulp mill pollution. 13 p. (6)

719. Loew, F. M., B. Schiefer, G. W. Forsyth, E. D. Olfert, V. A. Laxdal, and R. G. Ackman. 1977. Interim report of experiments in progress: a comparison of clinical, clinical chemical, and pathological effects of lard-corn oil and partially hydrogenated herring oil as major dietary fats in cynomologus monkeys. 73 p. (8)

720. Hiltz, L. L. 1977. The ocean clam (*Arctica islandica*). A literature review. G. E. Mack (ed.). 161 p. (8)

721. Prouse, N. J., and B. T. Hargrave. 1977. Chlorophyll, carbon and nitrogen in suspended and sedimented particulate matter in St. Georges Bay, Nova Scotia. 75 p. (7)

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725. Wang, J. C. C., E. R. Amiro, and R. Selfridge. 1977. Chemical composition, storage life on ice and some physical characteristics of the Atlantic argentine (*Argentina silus* (Ascanius)). 7 p. (8)

726. Kennedy, W. A., W. Griffioen, and A. Solmie. 1977. The 1976 crop of salmon reared on the Pacific Biological Station experimental fishfarm. 21 p. (1)

727. Bilinski, E., Y. C. Lau, and R. E. E. Jonas. 1977. Objective measurement and control of the firmness of canned herring. 23 p. (2)

729. Johansen, P., V. B. Jensen, and A. Büchert. 1977. Hydrocarbons in marine organisms and sediments off West Greenland. R. G. Ackman (ed.). 33 p. (8)

MANUSCRIPT REPORTS/RAPPORTS MANUSCRITS

Abbreviation: M

(NOTE: These reports contain scientific and technical information that represents an important contribution to existing knowledge but which for some reason may not be appropriate for primary scientific (i.e. *Journal*) publication. They differ from Technical Reports in terms of subject scope and potential audience: Manuscript Reports deal primarily with national or regional problems and distribution is generally restricted to institutions or individuals located in particular regions of Canada. The numerals in parentheses at the end of each reference indicate the name of the establishment from which the information or the Report originated and to which request for a copy can be made. See pages 2444-2445 for addresses corresponding to these numerals.)

(REMARQUE: Ces rapports contiennent des renseignements scientifiques et techniques qui constituent une contribution importante aux connaissances actuelles mais que, pour une raison ou pour une autre, ne semblent pas appropriés pour la publication dans un journal scientifique. Ils se distinguent des Rapports techniques par la portée du sujet et le lecteur visé; en effet, ils s'attachent principalement à des problèmes d'ordre national ou régional et la distribution en est généralement limitée aux organismes et aux personnes de régions particulières du Canada. Le numéro entre parèntheses, à la fin de chaque référence, indique l'établissement d'où provient la documentation du rapport et auquel on peut en demander un exemplaire. Voir aux pages 2444-2445 les adresses correspondant à ces numéros.)

1426. Cook, D. G., J. M. Reinhart, and J. Watson. 1977. Guide for preparing Fisheries and Marine Service scientific and technical reports. 14 p. (10)

1427. Hourston, A. S. 1977. Publications and reports on Pacific herring arising from investigations conducted at or in cooperation with the Pacific Biological Station. 21 p. (1)

1428. Glova, G. J., and J. C. Mason. 1977. Interactions for food and space between sympatric populations of underyearling coho salmon and coastal cutthroat trout in a stream simulator during summer. 36 p. (1)

1429. Glova, G. J., and J. C. Mason. 1977. Interactions for food and space between sympatric populations of juvenile coho salmon and coastal cutthroat trout in a stream simulator during winter and spring. 31 p. (1)

DATA REPORTS/RAPPORTS STATISTIQUES

Abbreviation: D

(NOTE: These reports provide a medium for filing and archiving data compilations where little or no analysis is included. Such compilations commonly will have been prepared in support of other journal publications or reports. The subject matter of Data Reports reflects the broad interests and policies of the Fisheries and Marine Service, namely, fisheries management, technology and development, ocean sciences and aquatic environments revelant to Canada.

Numbers 1-25 in this series (except No. 24 issued by Newfoundland Region, St. John's, Nfld.) were issued as Fisheries and Marine Service Data Records by the Pacific Biological Station, Nanaimo, B.C. The series name was changed with report number 26. The numerals in parentheses at the end of each reference indicate the name of the establishment from which the information or the Report originated and to which request for a copy can be made. See pages 2444-2445 for addresses corresponding to these numerals.)

(REMARQUE: Ces rapports servent de base à la compilation des données de classement et d'archives pour lesquelles il y a peu ou point d'analyse. Cette compilation aura d'ordinaire été preparée pour appuyer d'autres publications ou rapports. Les sujets des Rapports statistiques reflètent la vaste gamme des intérêts et politiques du Service des pêches et de la mer, notamment gestion des pêches, techniques et développement, sciences océaniques et environnements aquatiques, au Canada.

Les numéros de 1 à 25 de cette serie (sauf le nº 24, publié par région de Terre-Neuve, St-Jean, T.-N.) ont été publies à titre de Records statistiques, Service des pêches et de la mer, par la Station biologique de Pacifique, Nanaimo, (C.-B.). Le nom de la série a été modifie à partir du numéro 26. Le numéro entre parenthèses, à la fin de chaque référence, indique l'établissement d'où provient la documentation du rapport et auquel on peut en demander un examplaire. Voir aux pages 2444-2445 les adresses correspondant à ces numéros.)

26. Whelan, W. G., and R. J. Wiseman. 1977. The limnology and sport fish populations of three lakes located on the Southern Shore, Avalon Peninsula, Newfoundland. 28 p. (9)

27. Stephens, K., O. D. Kennedy, and R. J. LeBrasseur. 1977. Primary and secondary productivity data for Great Central Lake, 1975. 80 p. (1)

28. Stephens, K., and J. Sibert. 1977. Biological oceanographic observations, Rupert Inlet, Holberg Inlet and Quatsino Sound, B.C., 1975. 14 p. (1)

29. Kennedy, O. D., R. LeBrasseur, C. McAllister, and K. Stephens. 1977. Limnological inventory of selected British Columbia lakes, August-October 1976. 48 p. (1)

30. Stephens, K., O. D. Kennedy, and R. J. LeBrasseur. 1977. Primary and secondary productivity data for Great Central Lake, 1976. 78 p. (1)

31. Kennedy, O. D., R. J. LeBrasseur, and K. Stephens. 1977. Limnological data from Henderson Lake, B.C., 1976. 30 p. (1)

32. DeClercq, D. R., J. A. Shearer, S. L. Schiff, and E. J. Fee. 1977. Primary production, respiration, chlorophyll and suspended carbon in the Experimental Lakes Area - 1976 data. 94 p. (4)

33. Shearer, J. A., and D. R. DeClercq. 1977. Light extinction measurements in the Experimental Lakes Area - 1976 data. 103 p. (4)

34. Wickett, W. P., J. A. Thomson, and A. Ballantyne. 1977. Transport computations for the North Pacific Ocean 1976. 101 p. (1)

35. Wickett, W. P., J. A. Thomson, and A. Ballantyne. 1977. Transport computations for the North Pacific Ocean 1960-1975, 16-year means by months. 101 p. (1)

36. Ketchen, K. S. 1977. Catch statistics of the Canadian and United States trawl fisheries off northern Washington and southern Vancouver Island coasts by sub-areas of PMFC Areas 3B and 3C, 1963-1975. 41 p. (1)

37. Boutillier, J. A., A. N. Yates, and T. H. Butler. 1977. G. B. REED Shrimp Cruise 77-5-1, May 3-14, 1977. 42 p. (1)

38. Stephens, K. 1977. Primary productivity data from weatherships occupying Ocean Station "P" 1969 to 1975. 88 p. (1)

39. Aro, K. V., P. L. Miller, and J. McDonald. 1977. Catches and escapements of Pacific salmon in British Columbia, 1965-1975. 67 p. (1)

40. Westrheim, S. J., D. Davenport, and W. R. Harling. 1977. G. B. REED Groundfish Cruise No. 77-1 (March 8-30, 1977). 35 p. (1)

INTERPRETIVE ARTICLES/ARTICLES EXPLICATIFS

Abbreviation: A

(NOTE: The numeral in parentheses at the end of each reference indicates the name of the Fisheries and Marine Service establishment from which request for a copy can be made. See pages 2444-2445 for addresses corresponding to these numerals.)

(REMARQUE: Le numéro entre parenthèses, à la fin de chaque référence, indique l'établissement du Service des pêches et des sciences de la mer d'où provient la documentation du rapport et auquel on peut en demander un examplaire. Voir aux pages 2444-2445 les adresses correspondant à ces numeros.)

342. Schindler, D. W. 1976. The impact statement boondoggle. Science 192: 509. (4)

343. Mundie, J. H. 1976. Concluding remarks: the problem in its setting. West. Geogr. Ser. 13: 1-4. (1)

344. Smith, T. G. 1976. The icy birthplace and hard life of the Arctic ringed seal. Can. Geogr. J. 93: 58-63. (5)

345. Beamish, R. J. 1976. Acidification of lakes in Canada by acid precipitation and the resulting effects on fishes. Proc. 1st Int. Symp. Acid Precipitation and the Forest Ecosystem. USDA For. Serv. Gen. Tech. Rep. NE-23: 479-497. (1)

346. Smith. T. G. 1976. Biology of the Beaufort Sea. Can. Arctic Resour. Comm. p. 147-152. (5)

347. Sergeant, D. E. 1976. History and present status of populations of harp and hooded seals. Biol. Conserv. 10: 96-118. (5)

348. Beck, B., and T. G. Smith. 1976. Seal finger: an unsolved medical problem in Canada. Can. Med. Assoc. J. 115: 105. (5)

349. MacAskie, I. B. 1975. Sea otters: a third transplant to British Columbia. The Beaver, Spring/1975: 9-11. (5)

350. Platt, T., and R. J. Conover. 1975. The ecology of St. Margaret's Bay and other inlets on the Atlantic coast of Nova Scotia. p. 249-259. *In* J. W. M. Cameron and L. W. Billingsley (ed.) Energy flow - its biological dimensions. Roy. Soc. Can., sec. 5. (7)

351. Landry, G. J., R. S. Bassett, and J. F. Uthe. 1976. An improved tool for the removal of the left-hand cone in the graphite furnace. At. Absorp. Newsl. 15: 108. (8)

CIRCULARS/CIRCULAIRES

HALIFAX LABORATORY/LABORATOIRE D'HALIFAX

Halifax, N.S./N.-É. (8)

Abbreviation: CHN

58. Varga, S. 1976. Handling methods for landing food grade herring. 5 p.

59. Dingle, J. R., B. Lall, and R. A. Keith. 1976. The mixing of minced flesh of different fish may be risky. 5 p.

60. Dobson, R. E. 1976. The processing of Atlantic herring roe for food. 4 p.

61. Ke, P. J., A. D. Woyewoda, L. W. Regier, and R. G. Ackman. 1976. An improved titrimetric method for determination of free fatty acid in fish oils. 4 p.

62. Davis, R. 1977. The effect of ice on the time to chill round herring in boxes in a cool room. 3 p.

PACIFIC BIOLOGICAL STATION/STATION BIOLOGIQUE DU PACIFIQUE

Nanaimo, B.C./C.-B. (1)

Abbreviation: CNG

103. Leaman, B. M., and S. J. Westrheim. 1976. G. B. REED Groundfish Cruise 76-2, July 6-20, 1976. 9 p.

104. Narver, D. W., and T. W. Chamberlin. 1976. Carnation Creek - an experiment towards integrated resource management. 20 p.

105. Clark, M. J. R. 1976. Mercury concentrations in lake, river and marine waters off British Columbia. 12 p.

106. Clark, M. J. R., and J. D. Ellis. 1976. B.C. Water Resources Service discharge and environmental data base (EQUIS). 27 p.

107. Harling, W. R., N. Sigmund, and S. J. Westrheim. 1977. Industrial Development Program explorations for Dover sole (*Microstomus pacificus*) off northwestern British Columbia during February 1977. 58 p.

(For full addresses see p. 2444-2445)

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